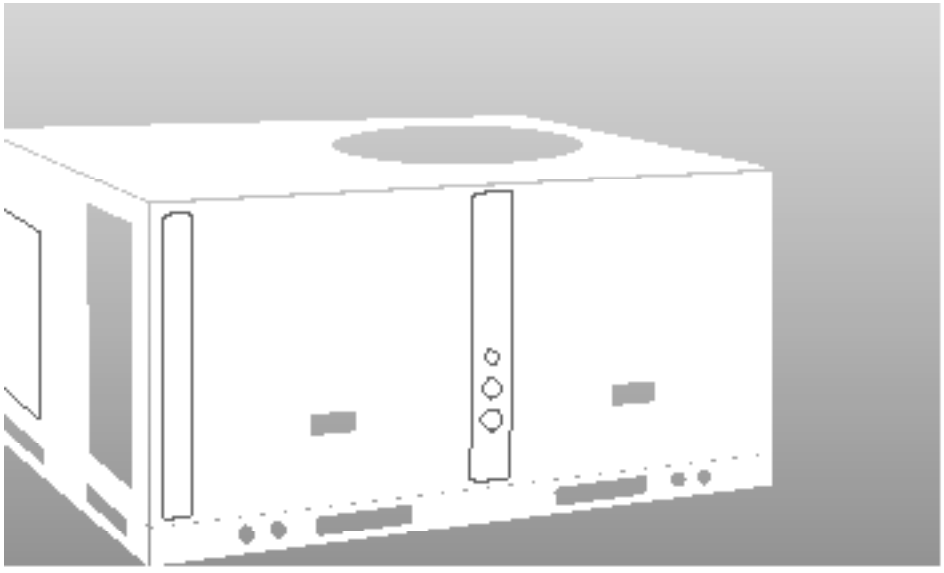
SAMSUNG

USER'S & INSTALLATION MANUAL

RC060RTRGA
RC070RTRGA
RC080RTRGA
RC100RTRGA
RC120RTRGA
RC150RTRGA
RC180RTRGA
RC200RTRGA
RC250RTRGA

System Air Conditioner

(Cooling Only)



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1. ACCESSORIES

Tab.1-1

Name of accessories	Qty	Shape
Manual	1	
Drain outlet	1	
Snap ring	1	
Drain pipe	1	
KJR-12B Wire controller	1	

2. GENERAL INFORMATION

Warnings and Cautions appear at appropriate locations throughout this manual.

Read these carefully.

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices and where property-damage-only accidents could occur.

CAUTION

- Read this entire manual before beginning installation procedures.
- Bodily injury can result from high voltage electrical components, fast moving fans. For protection from these inherent hazards during installation and servicing, the electrical supply must be disconnected.
- If operating checks must be performed with the unit operating, it is the technicians responsibility to recognize these hazards and proceed safely.

WARNING

- **Ask your dealer for installation of the air conditioner.**
  Incomplete installation performed by yourself may result in a water leakage, electric shock, and fire.
- **Ask your dealer for improvement, repair, and maintenance.**
  Incomplete improvement, repair, and maintenance may result in a water leakage, electric shock, and fire.
- **In order to avoid electric shock, fire or injury, or if you detect any abnormality such as smell of fire, turn off the power supply and call your dealer for instructions.**
- **Never replace a fuse with that of wrong rated current or other wires when a fuse blows out.**
  Use of wire or copper wire may cause the unit to break down or cause a fire.
- **Do not insert fingers, rods or other objects into the air inlet or outlet.**
  When the fan is rotating at high speed, it will cause injury.
- **Never use a flammable spray such as hair spray, lacqueror paint near the unit.**
  It may cause a fire.
- **Never inspect or service the unit by yourself.**
  Ask a qualified service person to perform this work.
- **Do not dispose this product as unsorted municipal waste.Collection of such waste separately for special treatment is necessary.**
- **Keep far away from high-frequency equipment.**
- **Keep away from the following places:**
  A place where it is full of oil gas; places where salty air surrounding(near the coast); a place where is caustic gas(the sulfide in hotspring). Location in the folling places may cause malfunction or shorten the life span of the manchine.
- **In the cace of extremely strong wind, please prevent the air from flowing backwards into the outdoor unit.**
- **Snow canopy is necessary in sonwfall places on the outdoor unit. Please consult the local dealer for details.**
- **In the frequent thunderstruck place, lightning proof actions should be taken.**
- **To prevent refrigerant leak, contact your dealer.**
  When the system is installed and runs in a small room, it is required to keep the concentration of the refrigerant, if by any chance coming out, below the limit. Otherwise, oxygen in the room may be affected, resulting in a serious accident.
- **The refrigerant in the air conditioner is safe and normally does not leak.**
  If the refrigerant leaks in the room, contact with a fire of a burner, a heater or a cooker may result in a harmful gas.
- **Turn off any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.**
  Do not use the air conditioner until a service person confirms that the portion where the refrigerant leaks is repaired.

3. DIMENSIONAL DATA

Units: mm

380-415V / 3Ph / 50Hz
6 / 7 Tons C/O Units

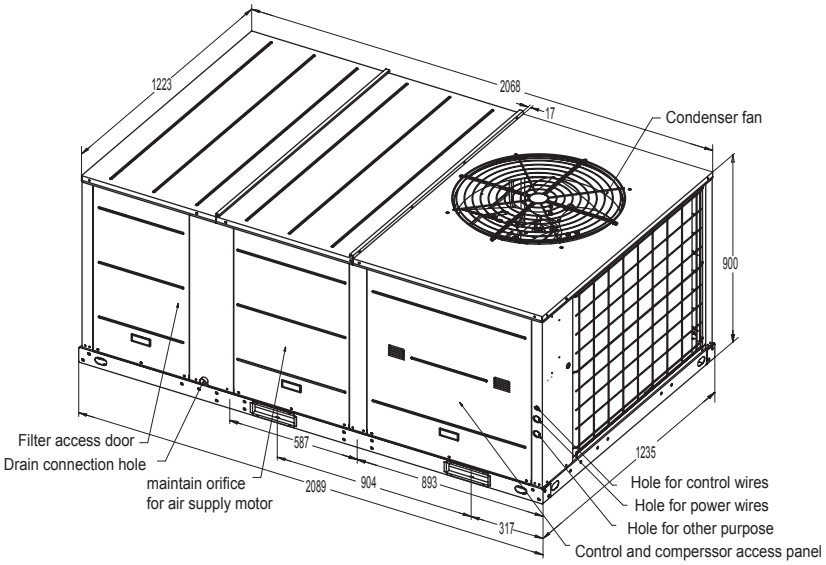


Fig.3-1

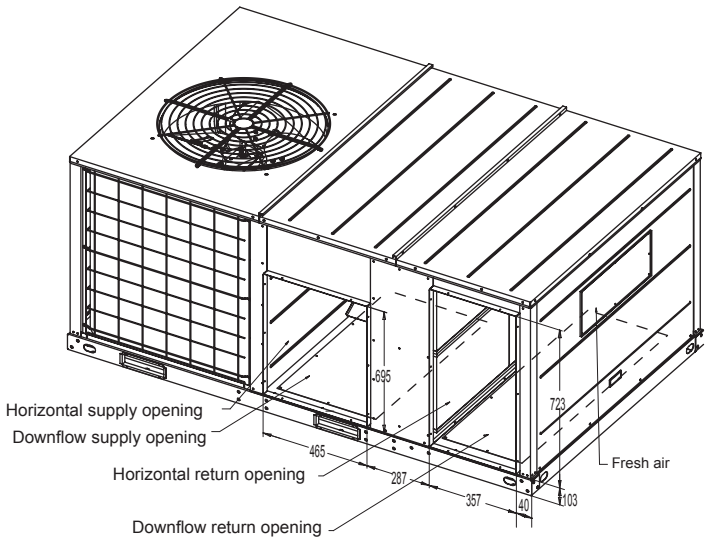


Fig.3-2

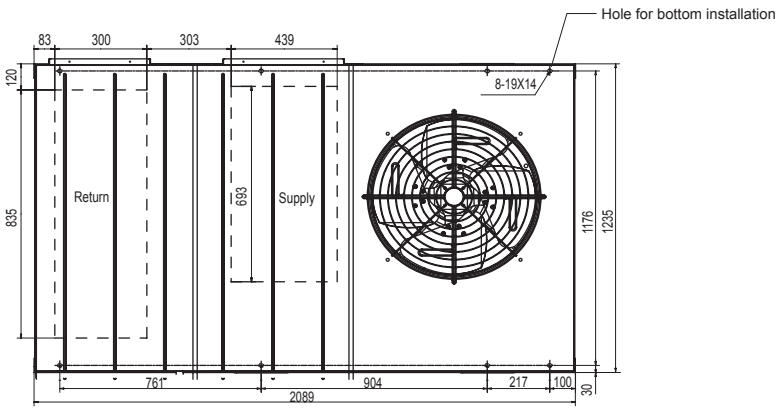


Fig.3-3

Units: mm

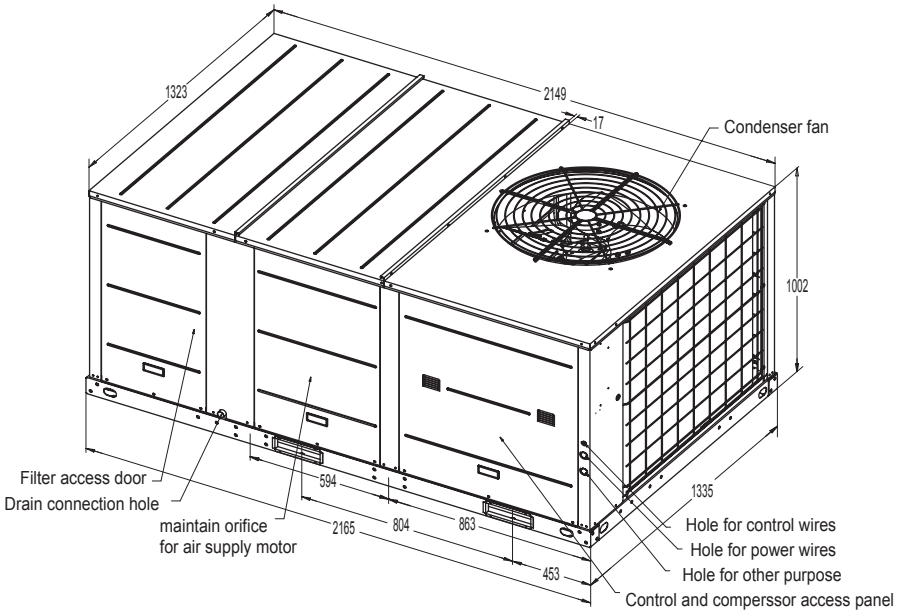


Fig.3-4

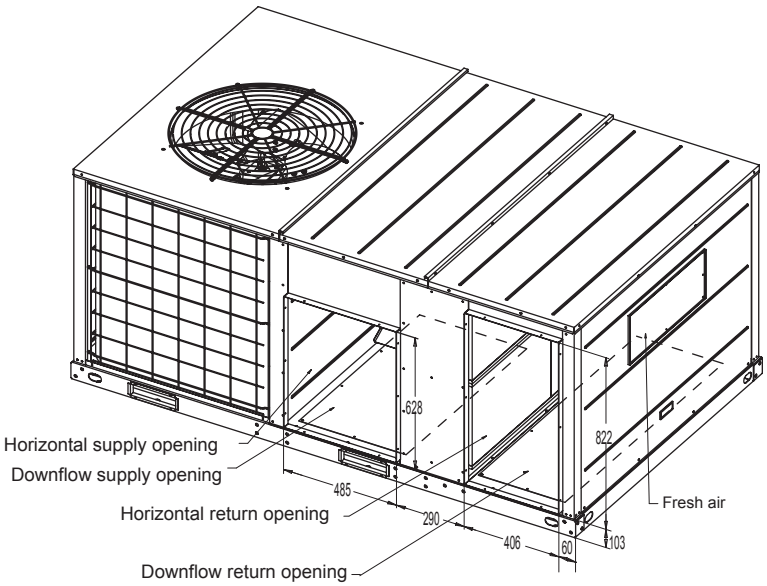


Fig.3-5

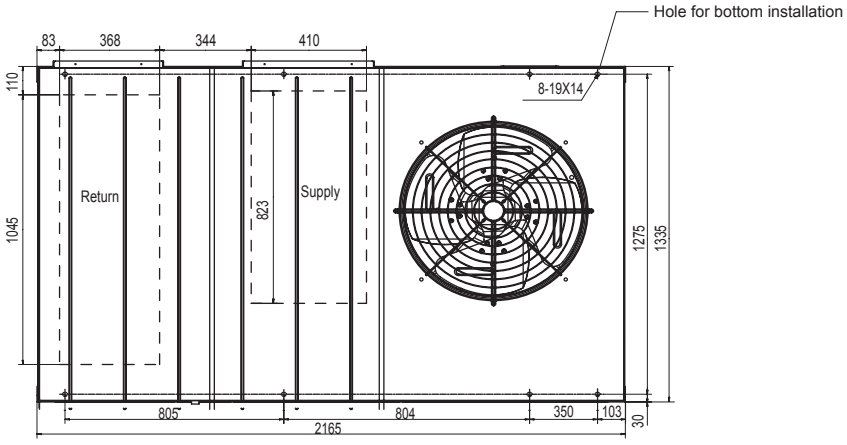


Fig.3-6

Units: mm

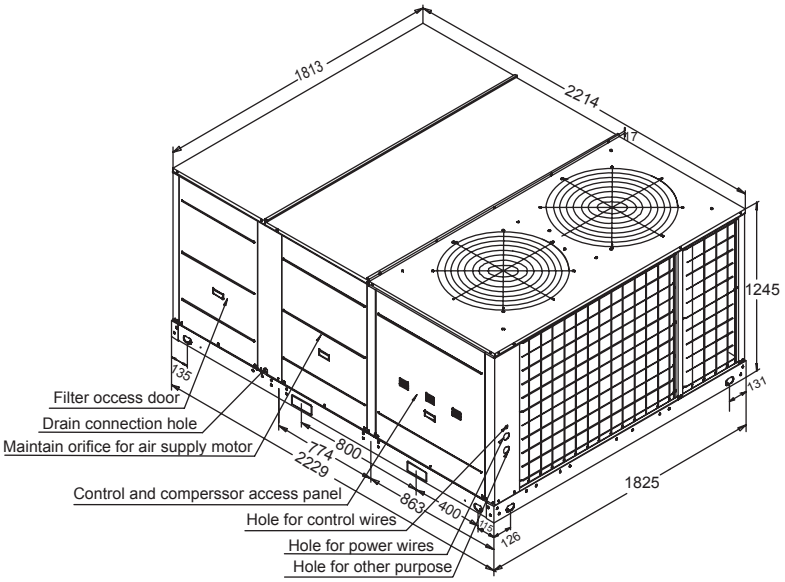


Fig.3-7

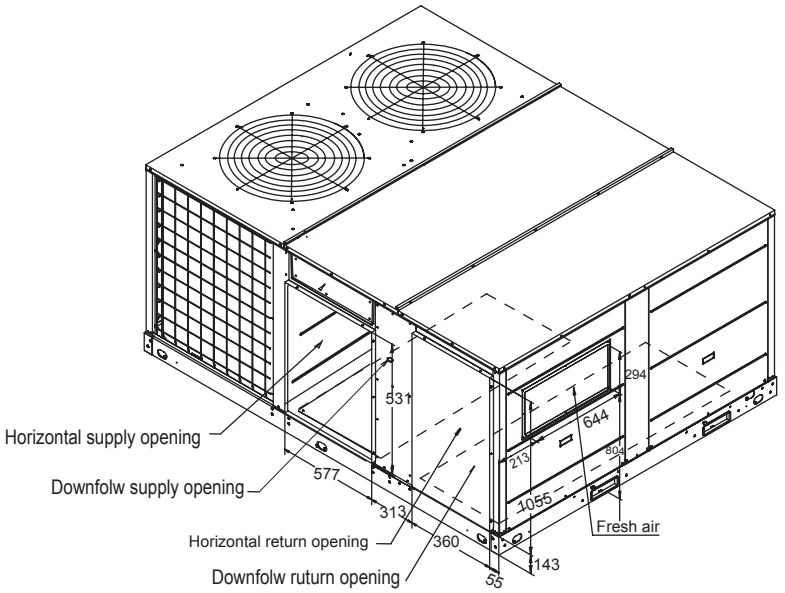


Fig.3-8

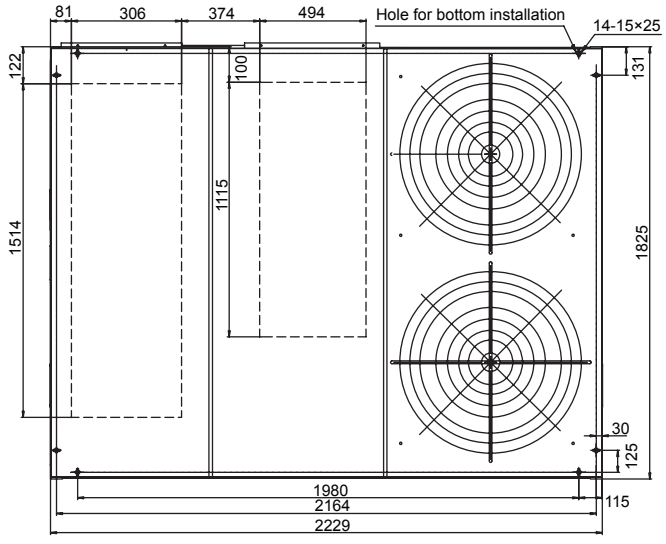


Fig.3-9

Units: mm

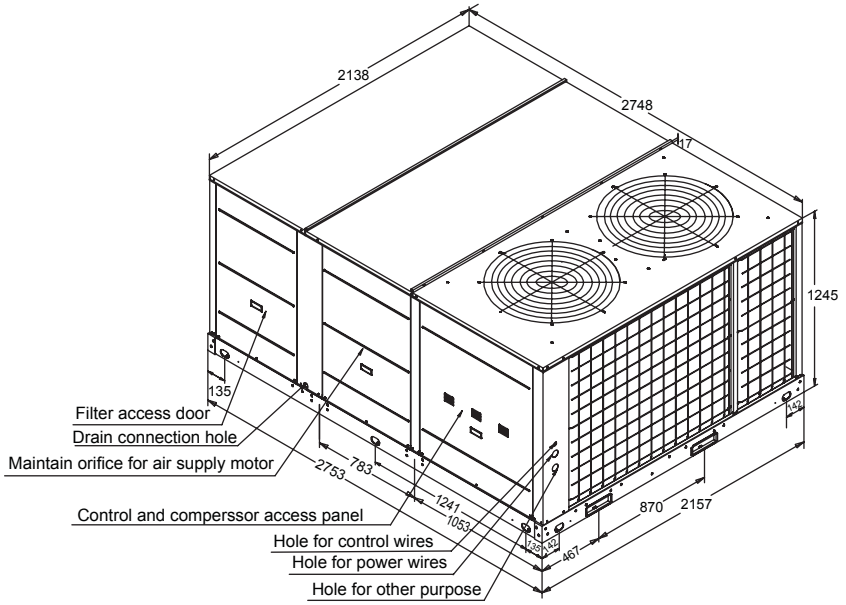


Fig.3-10

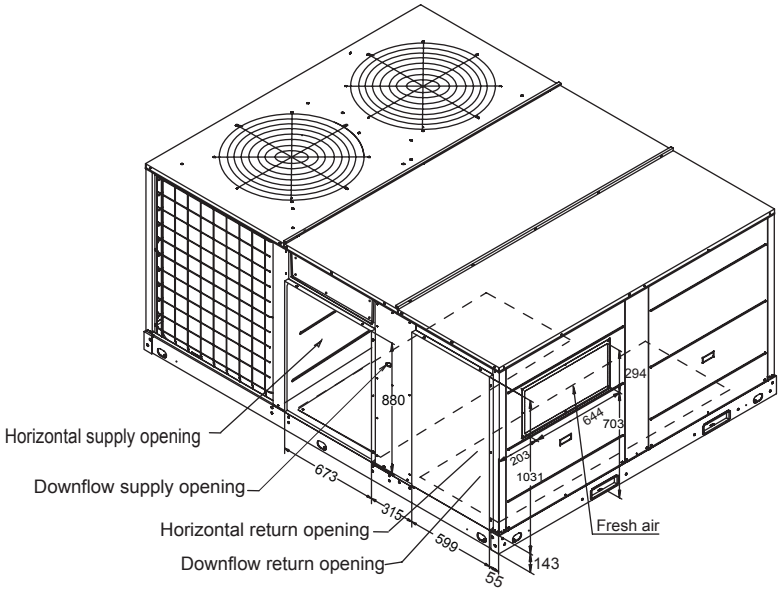


Fig.3-11

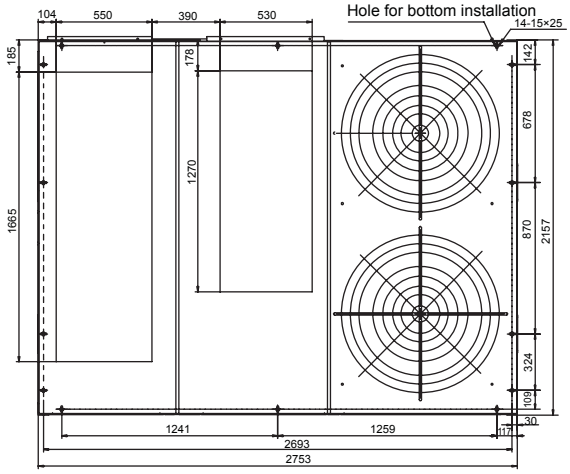


Fig.3-12

Units: mm

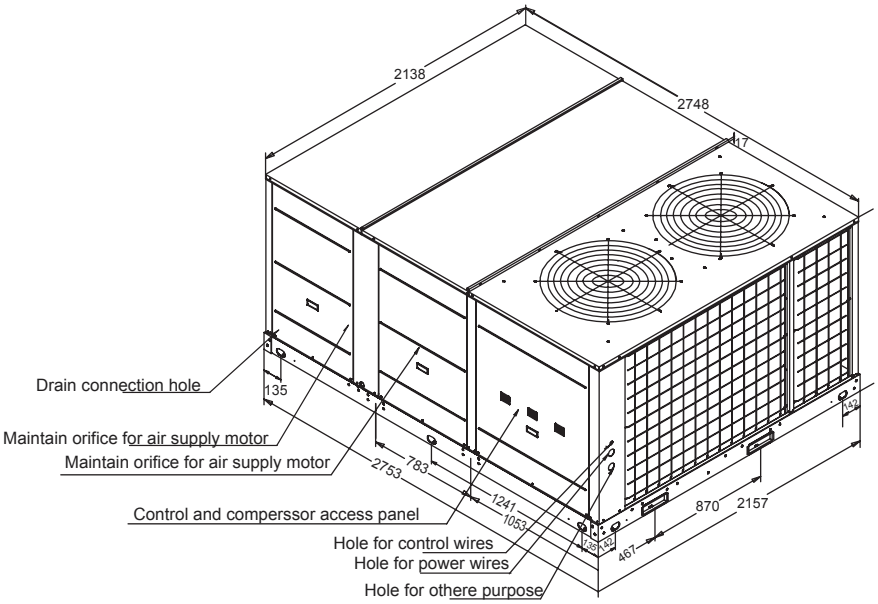


Fig.3-13

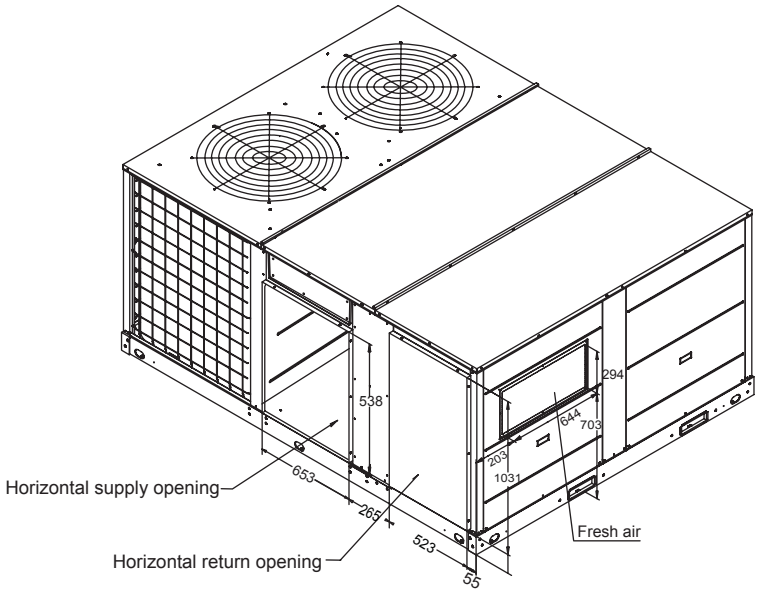


Fig.3-14

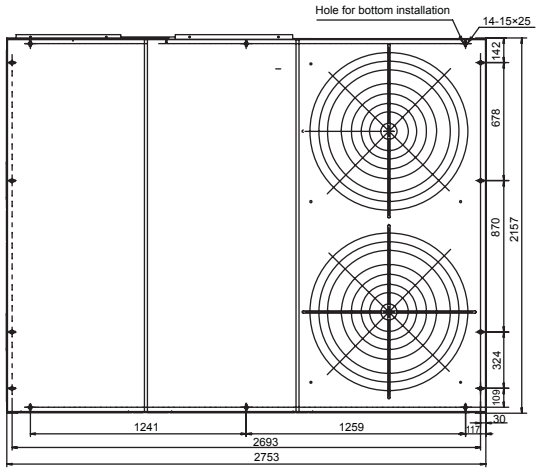


Fig.3-15

4. LOCATIONS AND RECOMMENDATIONS

4.1 Horizontal airflow application

- When choose horizontal air supply mode, please remove horizontal air supply panel and horizontal air return panel firstly. See *Fig.5-2*
- These units are design certified for outdoor installations. These units may be installed directly on wood flooring or on Class A, Class B, or Class C roof covering material.
- Location of the unit must allow service clearance around it. Clearance of the unit must be given careful consideration.
- Check the handling facilities to ensure the safety of personnel and the unit(s).
- Caution must be taken at all times to avoid Personal injuries and/or damage to equipment.
- The unit must be mounted level for proper drainage of water through the holes in the base pan.
- The unit must not be exposed to direct roof water runoff.
- Flexible duct connectors must be of a flame retardant material. All duct work outside of the structure must be insulated and weatherproofed in accordance with local codes.
- Holes through exterior walls must be sealed in accordance with local codes.
- All fabricated outdoor ducts should be as short as possible.

4.2 Downflow application-curb mounting

- When choose vertical air supply mode, for model 6.2 to 10 ton, please remove vertical air supply panel and vertical air return panel firstly; and then unload air down flow panel, horizontal deflector and air down-return panel; lastly, remount horizontal air supply panel and horizontal air return panel. See *Fig.5-3*.
- When choose vertical air supply mode, for model 12.5 to 20 ton, please unload air down flow panel、air down-return panel. See *Fig.5-4*.
- The Roof Mounting Curb, or a field fabricated curb must be in place before the unit is hoisted to the roof top.
- The Roof Mounting Curb (frame) must be installed on a flat, level section of the roof and provide a level mounting surface for the unit. In addition, be sure to provide sufficient height above the roof to prevent water from entering the unit.
- Be sure the mounting curb spans structural members (trusses) of the roof, thereby providing sufficient support for the weight of the unit, the curb, the duct(s), and any factory or field installed accessories.
- Be sure the hole in the structure for the ducts is large enough to accommodate the fabricated ducts and the insulation surrounding them.
- These units are design certified for outdoor installation. These units may be installed directly on wood flooring or on Class A,Class B, or Class C roof covering material.
- Location of the unit must allow for service clearance around it. Clearance of the unit must be given careful consideration.
- Check the handling facilities to ensure the safety of personnel and the unit(s).
- Caution must be taken at all times to avoid personal injuries and/or damage to the equipment.
- The unit must be mounted level for proper drainage of water through the holes in the base pan.
- The unit must not be exposed to direct roof water runoff.
- Flexible duct connectors must be of a flame retardant material. All duct work outside of the structure must be insulated and weatherproofed in accordance with local codes.
- Roof flashing must be installed to seal the roof curb cavity and must conform to local building codes.
- All fabricated outdoor ducts should be as short as possible.

4.3 Clearances

- The recommended clearances for single-unit installations are illustrated in *Fig.4-1*
  These minimum requirements are not only an important consideration when determining unit placement, but they are also essential to ensure adequate serviceability, maximum capacity, and peak operating efficiency.
- Any reduction of the unit clearances indicated in these illustrations may result in condenser coil starvation or the recirculation of warm condenser air. Actual clearances which appear to be inadequate should be reviewed with a local engineer.
- See the unit's nameplate for the absolute minimum clearance between the unit and any combustible surface(s).

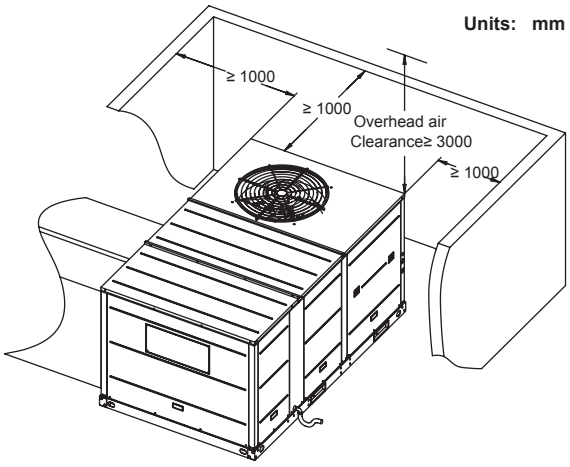


Fig.4-1

5. INSTALLATION

5.1 Lifting

- Rigging cables should have adequate capability to resist 3 times weight of unit. Before lift, please check and ensure that hooks are holding tightly to unit and lifting angles are no less than 60°.
- Cloth material or hard-paper should be padded in the contact place between unit and rigging cable. Rigging cable should be entwined a round at the hook for prevent danger by cable slip because of weight unbalance.
- During lifting, anyone forbidden lingering under the lifting unit.

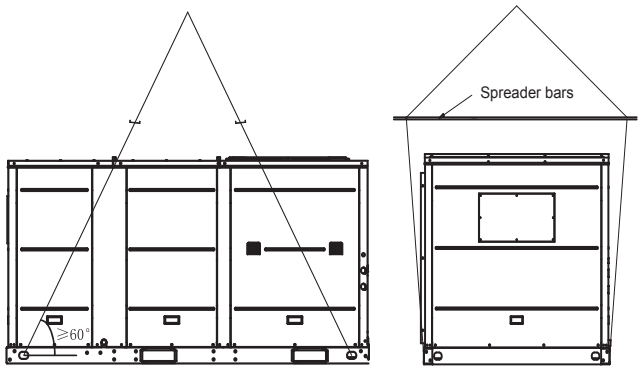


Fig.5-1

5.2 Rooftop-units

- **For roof top applications using a field fabricated frame and ducts, use the following procedure:**
- The frame must be located and secured by bolting or welding to the roof. Flashing is required.
- The hole in the roof must be prepared in advance of installing the unit.
- Secure the ducts to the roof.
- Place the unit on the frame or roof curb.
- Secure the unit to the frame or roof curb.
- Insulate any ductwork outside of the structure with at least two (2) inches of insulation and then weatherproof. There must be a weatherproof seal where the duct enters the structure.
- Complete the installation according to the instructions in the following sections of this manual.
- Typical rooftop application with frame

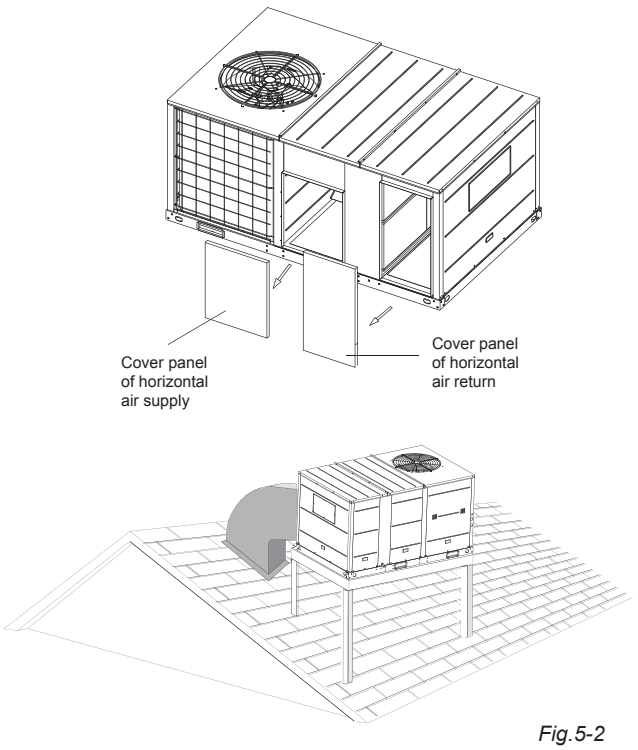
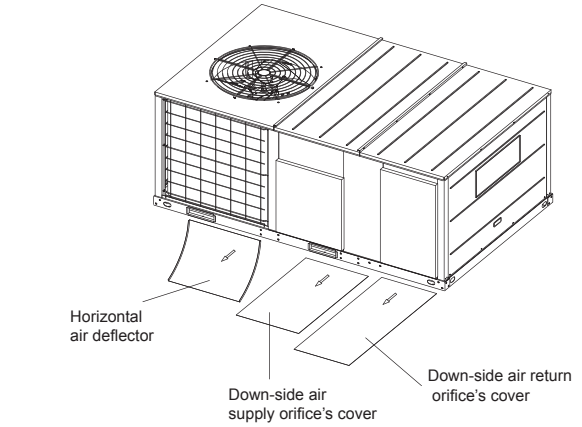


Fig.5-2

- Typical rooftop application with frame



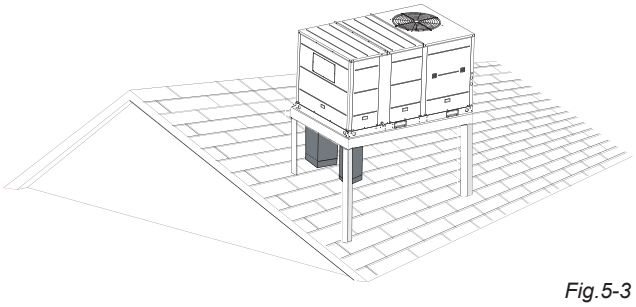


Fig.5-3

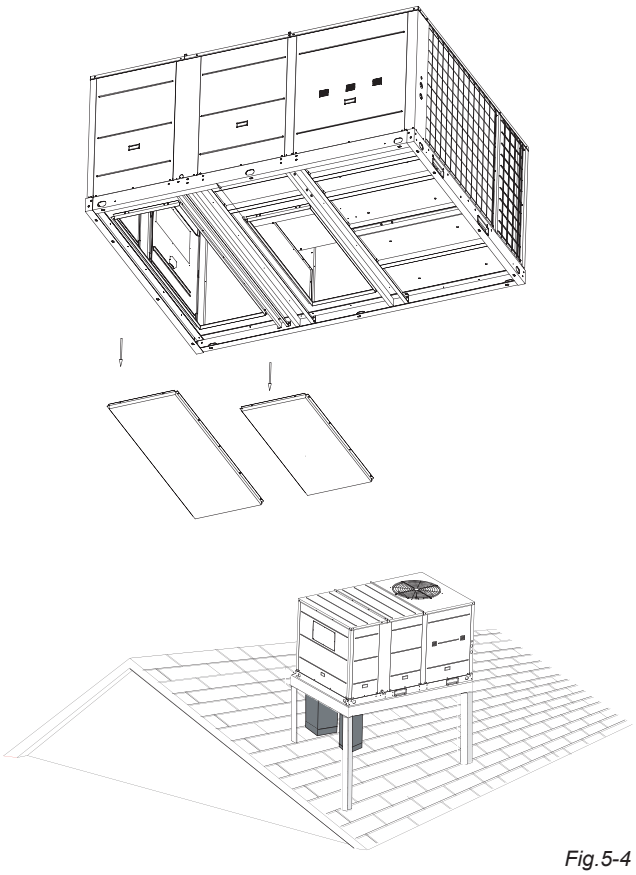


Fig.5-4

5.3 Ground level-horizontal units

- For ground level installations, the unit should be positioned on a pad in the size of the unit or larger. The unit must be level on the pad. The pad must not come in contact with the structure. Be sure the outdoor portion of the supply and return air ducts are as short as possible.
- Proceed with the installation as follows:
- Place the unit on the pad.
- Attach the supply and return air ducts to the unit.
- Insulate any ductwork outside of the structure with at least 2 inches of insulation and weatherproof. There must be a weatherproof seal where the duct enters the structure.
- Complete the installation according to the instructions in the following sections of this manual.
- Typical ground level application

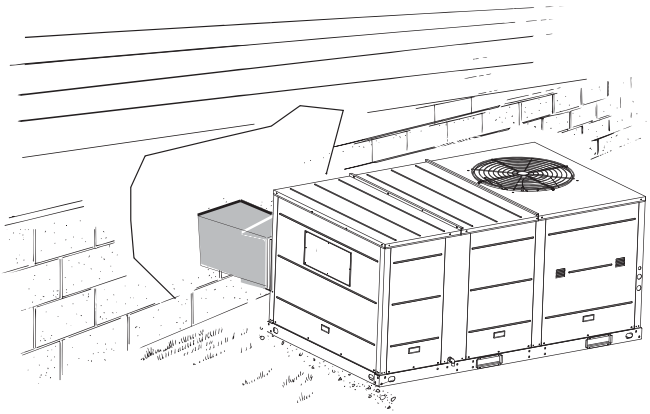
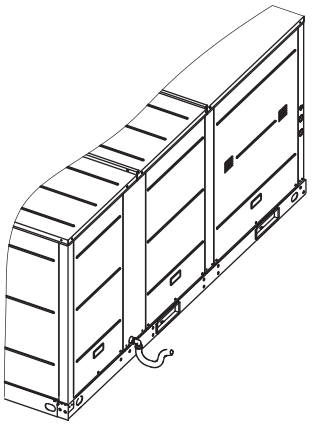
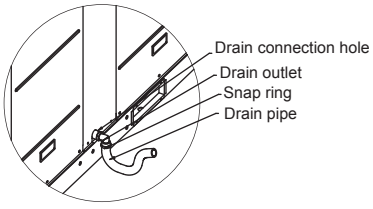


Fig.5-5

5.4 Condensate drain piping





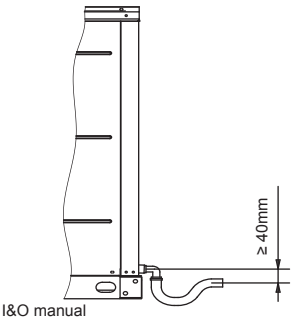


Fig.5-6

5.5 Ductwork

- Attaching horizontal ductwork to unit

All conditioned air ductwork should be insulated to minimize heating and cooling duct losses. Use a minimum of two (2) inches of insulation with a vapor barrier. The outside ductwork must be weatherproofed between the unit and the building.

When attaching ductwork to a horizontal unit, provide a flexible watertight connection to prevent noise transmission from the unit to the ducts. The flexible connection must be indoors and made out of heavy canvas.

NOTE

Do not draw the canvas taut between the solid ducts.

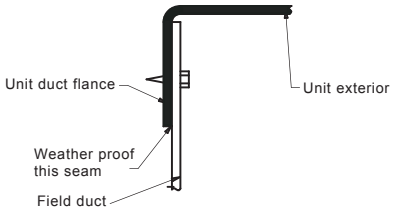


Fig.5-7

- Attaching downflow ductwork to roof curb
- Supply and return air flanges are provided on the roof curb for easy duct installation. All ductwork must be run and attached to the curb before the unit is set into place.
- Follow these guidelines for ductwork construction:

Connections to the unit should be made with three-inch canvas connectors to minimize noise and vibration transmission.

Elbows with turning vanes or splitters are recommended to minimize air noise and resistance.

The first elbow in the ductwork leaving the unit should be no closer than two feet from the unit, to minimize noise and resistance.

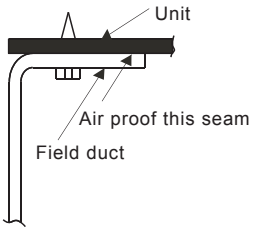


Fig.5-8

6. ELECTRICAL WIRING

6.1 Protections and safety control

■ **Minutes delay for the compressor start-up**

- At the beginning of energizing or after the stop of the compressor, 3-minutes delay will be taken to start the compressor.
- When switchover between cooling/heating mode, the compressor stops automatically.

■ **Compressor discharge gas temperature switch protection**
When compressor discharge gas temperature＞266F, discharge gas temperature switch will be closed. At the same time, the corresponding compressor will be shut off. The ON/OFF signal and high-pressure protection signal should be connected together.

■ **Reverse phase protection relay**

- The reverse phase protection relay will make the compressor not start, when the power source is incorrectly connected.
- The checking of phase' order is just carried out at the first time of electrifying. If malfunction happens then the checking will be going on until the order of phase is right, and the E0 will be displayed on the board. If there is no problem in the first checking, then it will be omitted.

■ **High pressure and low pressure protection**
The ON/OFF of high pressure and low pressure will be installed separately around inlet pipe, and both are connected to Main Control Board. The ON/OFF of high pressure will be off when the pressure is higher than 425Psi. The ON/OFF of low pressure will be off when lower than 7Psi.

6.2 Electrical data

■ **R407C 380-415V / 3Ph / 50Hz**

Tab.6-1

Nominal ton		6 Tons
Model type		C/O
Type of flow		Hor. & Dow.
Unit main power	VOL	380 - 415
	Hz	50
Applicable voltage	Max.	418
	Min.	342
Compressor motor	STC	39
	RNC	12.6
	IPT	7.0
Evaporator fan motor	RNC	2.8
	IPT	1.8
Condenser fan motor	RNC	2.0
	IPT	0.7
Electric heating	IPT	——

Tab.6-2

Nominal ton		7 Tons
Model type		C/O
Type of flow		Hor. & Dow.
Unit main power	VOL	380 - 415
	Hz	50
Applicable voltage	Max.	418
	Min.	342
Compressor motor	STC	55
	RNC	15
	IPT	8.0
Evaporator fan motor	RNC	3.0
	IPT	1.9
Condenser fan motor	RNC	2.2
	IPT	0.8
Electric heating	IPT	——

Tab.6-3

Nominal ton		8 Tons
Model type		C/O
Type of flow		Hor. & Dow.
Unit main power	VOL	380 - 415
	Hz	50
Applicable voltage	Max.	418
	Min.	342
Compressor motor	STC	55
	RNC	16.5
	IPT	8.9
Evaporator fan motor	RNC	5.3
	IPT	2.8
Condenser fan motor	RNC	2.2
	IPT	0.8
Electric heating	IPT	——

Tab.6-4

Nominal ton		10 Tons
Model type		C/O
Type of flow		Hor. & Dow.
Unit main power	VOL	380 - 415
	Hz	50
Applicable voltage	Max.	418
	Min.	342
Compressor motor	STC	60
	RNC	18.4
	IPT	10.5
Evaporator fan motor	RNC	5.3
	IPT	2.8
Condenser fan motor	RNC	2.2
	IPT	0.8
Electric heating	IPT	——

Tab.6-5

Nominal ton		12 Tons
Model type		C/O
Type of flow		Hor. & Dow.
Unit main power	VOL	380 - 415
	Hz	50
Applicable voltage	Max.	418
	Min.	342
Compressor motor	STC	128
	RNC	27.4
	IPT	13.5
Evaporator fan motor	RNC	8.5
	IPT	5.5
Condenser fan motor	RNC	3.4
	IPT	1.5
Electric heating	IPT	——

Tab.6-6

Nominal ton		15 Tons
Model type		C/O
Type of flow		Hor. & Dow.
Unit main power	VOL	380 - 415
	Hz	50
Applicable voltage	Max.	418
	Min.	342
Compressor motor	STC	110
	RNC	32.1
	IPT	15.3
Evaporator fan motor	RNC	8.5
	IPT	5.5
Condenser fan motor	RNC	5.2
	IPT	1.7
Electric heating	IPT	——

Tab.6-7

Nominal ton		18 Tons
Model type		C/O
Type of flow		Hor. & Dow.
Unit main power	VOL	380 - 415
	Hz	50
Applicable voltage	Max.	418
	Min.	342
Compressor motor	STC	128
	RNC	38.4
	IPT	18
Evaporator fan motor	RNC	8.5
	IPT	5.5
Condenser fan motor	RNC	5.2
	IPT	1.7
Electric heating	IPT	——

Tab.6-8

Nominal ton		20 Tons
Model type		C/O
Type of flow		Hor. & Dow.
Unit main power	VOL	380 - 415
	Hz	50
Applicable voltage	Max.	418
	Min.	342
Compressor motor	STC	140
	RNC	44.2
	IPT	20.2
Evaporator fan motor	RNC	8.5
	IPT	5.5
Condenser fan motor	RNC	5.2
	IPT	1.7
Electric heating	IPT	——

Tab.6-9

Nominal ton		25 Tons
Model type		C/O
Type of flow		Hor.
Unit main power	VOL	380 - 415
	Hz	50
Applicable voltage	Max.	418
	Min.	342
Compressor motor	STC	195
	RNC	50.2
	IPT	27.2
Evaporator fan motor	RNC	10
	IPT	7.5
Condenser fan motor	RNC	6.5
	IPT	3.4
Electric heating	IPT	——

NOTE

- These data are based on the following conditions.
  Evaporator Air Input Temperature 85° F DB, 66° F WB.
  Condenser Air Input Temperature 115° F DB.
- The strating current is indicated for each compressor motor.
- The maximum currents of the compressor can be estimated as follows.

Tab.6-10

	One compressor unit	Two compressors unit
Max. current	RNC×Max. IPT*/IPT	RNC×Max. IPT*/IPT
Max. instantaneous current	STC	STC+RNC×0.5 ×Max. IPT*/IPT

Max. IPT*: Compressor power input from the performance table at the expected maximum condition
STC,IPT,RNC: Compressor data from the above table

- The data in the compressor motor column shall indicate the respective values of the refrigeration cycle.

6.3 Installation Example

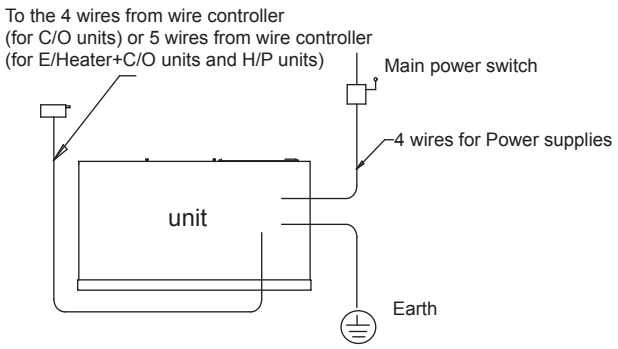


Fig.6-1

6.4 Wiring provision

- **Field wiring**
  The units are internally wired at the factory according to generally accepted electrical technology.
- **Required field wiring**
  Main power wiring to the unit control wiring between the control center and the unit, and earth wiring are required in the field.
- **Required components**
  The following components are required: main power fuses, conduit coupling, and field supplied room thermostat.
- **Wire and fuse size selection for main power source**
  Wire and fuse sizes should be selected in accordance with national and standard, taking the designed maximum current shall be the total of the compressor maximum current, condenser fan motor current and evaporator fan motor current(refer to “electrical data”).
- Wire size between room thermostat and unit
  The wire size between the room thermostat and the unit should be determined according to the following table, because the 24V power source is applied to the control circuit.

Tab.6-11

	Wiring length between room thermostat and unit(one way)				
	10m	15m	20m	30m	40m
Minimum wire size(mm^2)	0.5	0.5	0.75	0.75	1.0

6.5 Main power supply

Tab.6-12

Model type		Unit main power	Main power switch	Fuse	Wires for Power supplies
6Tons	C/O	380 - 415V 3N~ 50Hz	50A	40A	3×10mm²+2×6mm²
7Tons	C/O	380 - 415V 3N~ 50Hz	50A	40A	3×10mm²+2×6mm²
8Tons	C/O	380 - 415V 3N~ 50Hz	63A	50A	3×16mm²+2×10mm²
10Tons	C/O	380 - 415V 3N~ 50Hz	63A	50A	3×16mm²+2×10mm
12Tons	C/O	380 - 415V 3N~ 50Hz	75A	63A	3×16mm²+2×10mm²
15Tons	C/O	380 - 415V 3N~ 50Hz	85A	75A	3×25mm²+2×10mm²
18Tons	C/O	380 - 415V 3N~ 50Hz	100A	80A	3×25mm²+2×10mm²
20Tons	C/O	380 - 415V 3N~ 50Hz	100A	80A	3×25mm²+2×10mm²
25Tons	C/O	380 - 415V 3N~ 50Hz	120A	100A	3×35mm²+2×10mm²

6.6 Block cable connection

■ To connect with wire controller

For C/O Units

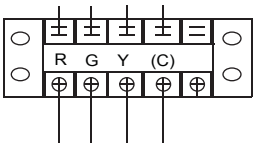


Fig.6-2

See the left figure:
1. When SW3 has been set in “ON”, please select KJR-12B wire controller;
2. When SW3 has been set in “1”, please select the wire controller be recommended in the below.

■ KJR-23B (For C/O)

Remark:
Two stage capacity control is optional.

■ Power supply

For 380-415V / 3Ph / 50Hz
6 / 7 / 8 / 10 Tons C/O Units

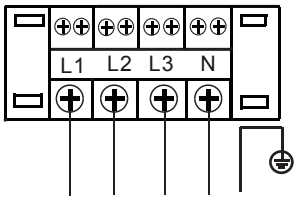


Fig.6-3

For 380-415V / 3Ph / 50Hz
12 / 15 / 18 / 20 / 25 Tons C/O Units

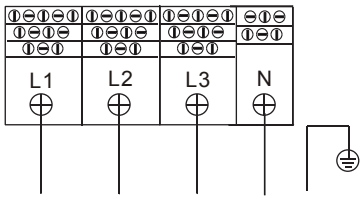
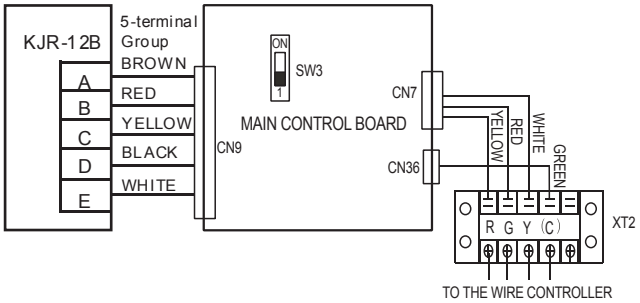


Fig.6-4

■ Dial code settings
Set the dial code SW3 of PCB in roof-top unit’s wire control box as per the wire controller you are in using. After settings, please shut off the power supply and then power to it again, otherwise, the new settings function couldn’t work.

For C/O Units



6.7 Error code

Tab.6-13

Type	Content	Code	Remarks
Normal	Standby	——	
Normal	Constraint cool	on	
Normal	Run	10.	
Error	Compressor phase sequence error or phase default	E0	
Error	Outdoor coil sensor in sys. A error	E1	
Error	Outdoor coil sensor in sys. B error	E2	
Error	Indoor coil sensor in sys. A error	E5	
Error	Indoor coil sensor in sys. B error	E6	
Error	Indoor sensor error	E9	
Error	Outdoor ambient sensor error	EA	
Error	Wire controller output error	Eb	
Protection	Overcurrent protection in sys.A	P0	
Protection	Overcurrent protection in sys.B	P1	
Protection	Overcurrent protection for indoor fan	P2	
Protection	Comprehensive protection for outdoor fan	P3	
Protection	Protection for Hi./Lo. pressure or exhaust temp. in sys.A	P4	Comprehensive protection in sys.A
Protection	Protection for Hi./Lo. pressure or exhaust temp. in sys.B	P5	Comprehensive protection in sys.B
Protection	Hi-pressure protection initiated in T2 evaporator stops the outdoor unit fan	P6	
Protection	Hi-pressure protection initiated in T2 evaporator stops the outdoor unit fan and compressor	P7	
Protection	Protection for condenser Hi-temp. in sys.A	P8	
Protection	Protection for condenser Hi-temp. in sys.B	P9	
Protection	Anti-freezing protection for evaporator in sys. A	Pc	
Protection	Anti-freezing protection for evaporator in sys. B	Pd	
Protection	Defrosting	dF	

7. SPECIFICATION

7.1 Physical Data

■ **R22 380-415V / 3Ph / 50Hz**

Tab.7-1

Nominal ton		6 Tons	7 Tons	8Tons	10 Tons	12 Tons	15 Tons
Model type		C/O	C/O	C/O	C/O	C/O	C/O
Type of flow		Hor. & Dow.	Hor. & Dow.	Hor. & Dow.	Hor. & Dow.	Hor. & Dow.	Hor. & Dow.
Capacity	Cooling capacity (Btu/h)(I)	73400	94000	107000	127000	150000	180000
	Heating capacity (Btu/h)(II)	——	——	——	——	——	——
Performance	SEER	9.9	9.7	10.5	10.3	10.4	9.4
Dimensions	Length(mm)	2089	2089	2165	2165	2229	2229
	Width(mm)	1235	1235	1335	1335	1825	1825
	Heigth(mm)	900	900	1002	1002	1245	1245
Net weight(kg)		402	406	441	443	700	710
Refrigerant type		R22	R22	R22	R22	R22	R22
Flow control(III)		Capillary	Capillary	Capillary	Capillary	Capillary	Capillary
Compressor	Quantity/Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor coil	Rows	3	3	3	3	3	3
	Fins per inch	15	15	15	15	15	15
	Tube diameter(in.)	3/8	3/8	3/8	3/8	3/8	3/8
Indoor coil	Rows	2	2	3	3	3	3
	Fins per inch	17	17	15	15	15	15
	Tube diameter(in.)	3/8	3/8	3/8	3/8	3/8	3/8
Outdoor fan	Quantity used/diameter(mm)	1/650	1/650	1/650	1/650	2/650	2/650
	Type	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	Drive type	Direct	Direct	Direct	Direct	Direct	Direct
	Quantity speeds	1	1	1	1	1	1
	Quantity motors/power(kW)	1/0.55	1/0.55	1/0.60	1/0.60	2/0.60	2/0.60
	Motor RPM	940±10	940±10	930±30	930±30	930±30	930±30
	Total nominal CFM	5880	5880	7060	7060	10000	11000
Indoor fan	Quantity used/diameter(in.)	1/10×10	1/10×10	1/12×12	1/12×12	1/15×15	1/15×15
	Type	FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal
	Drive type	Belt	Belt	Belt	Belt	Belt	Belt
	Quantity speeds	Variable sheave	Variable sheave	Variable sheave	Variable sheave	Variable sheave	Variable sheave
	Quantity motors/power(kW)	1/1.5	1/1.5	1/1.5	1/1.5	1/5.5	1/5.5
	Motor RPM	1440	1440	1440	1440	1440	1440
	Total nominal CFM	2500	3000	3400	4000	5000	6000
Filters(IV)	Quantity size recommended(mm)	(4) 529X357X12.5	(4) 529X357X12.5	(4) 566X404X12.5	(4) 566X404X12.5	(2) 1015X815X12.5	(2) 1015X815X12.5

NOTE

■ (I) Cooling capacities are rated at 95° F amblent, 80° F entering dry bulb, 67° F entering wet bulb. Air capacity is net and inculdes the effect of fan motor heat.Units are suitable for operation to ±20% of nominal CFM.

■ (II) Heating capacities are based on the following conditions:Indoor temperature 70° F entering dry bulb, 60° F entering dry bulb, outdoor temperature 47° F entering dry bulb, 43° F entering dry bulb.

■ (III) TXV is optional.

■ (IV) Optional 2" pleated filters also available.

Tab.7-2

Nominal ton		18 Tons	20 Tons	25 Tons
Model type		C/O	C/O	C/O
Type of flow		Hor. & Dow.	Hor. & Dow.	Hor.
Capacity	Cooling capacity (Btu/h)(I)	210000	240000	300000
	Heating capacity (Btu/h)(II)	——	——	——
Performance	SEER	10.0	9.7	9.7
Dimensions	Length(mm)	2753	2753	2753
	Width(mm)	2157	2157	2157
	Heigth(mm)	1245	1245	1245
Net weight(kg)		900	930	980
Refrigerant type		R22	R22	R22
Flow control(III)		Capillary	Capillary	Capillary
Compressor	Quantity/Type	2/Scroll	2/Scroll	2/Scroll
Outdoor coil	Rows	3	3	3.5
	Fins per inch	15	15	16
	Tube diameter(in.)	3/8	3/8	5/16
Indoor coil	Rows	3	3	4
	Fins per inch	15	15	16
	Tube diameter(in.)	3/8	3/8	5/16
Outdoor fan	Quantity used/diameter(mm)	2/750	2/750	2/800
	Type	Propeller	Propeller	Propeller
	Drive type	Direct	Direct	Direct
	Quantity speeds	1	1	1
	Quantity motors/power(kW)	2/1.1	2/1.1	2/1.5
	Motor RPM	944	944	910
	Total nominal CFM	12500	14000	16765
Indoor fan	Quantity used/diameter(in.)	1/18X18	1/18×18	1/18×18
	Type	FC centrifugal	FC centrifugal	FC centrifugal
	Drive type	Belt	Belt	Belt
	Quantity speeds	Variable sheave	Variable sheave	Variable sheave
	Quantity motors/power(kW)	1/5.5	1/5.5	1/7.5
	Motor RPM	1440	1440	1440
	Total nominal CFM	6800	7800	10200
Filters(IV)	Quantity size recommended(mm)	(2) 978X956X12.5	(2) 978X956X12.5	(3) 964X640X12.5

NOTE

■ (I) Cooling capacities are rated at 95° F amblent, 80° F entering dry bulb, 67° F entering wet bulb. Air capacity is net and inculdes the effect of fan motor heat.Units are suitable for operation to ±20% of nominal CFM.

■ (II) Heating capacities are based on the following conditions:Indoor temperature 70° F entering dry bulb, 60° F entering dry bulb, outdoor temperature 47° F entering dry bulb, 43° F entering dry bulb.

■ (III) TXV is optional.

■ (IV) Optional 2" pleated filters also available.

7.2 Parameter For Air Volume

■ Parameter table for indoor unit air volume

Tab.7-3

6 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	3350	2.1	956
20	3100	2.1	962
40	2702	2.0	971
60	2585	2.0	979
75	2402	2.0	982
100	2202	1.9	987
120	2100	1.9	993
150	1924	1.9	999

Tab.7-4

7 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	3355	2.5	1313
20	3235	2.4	1321
40	3120	2.3	1329
60	2900	2.2	1335
75	2825	2.1	1340
100	2350	2.0	1345
120	2510	1.9	1351
150	2355	1.9	1357

Tab.7-5

8 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	3904	2.3	1200
20	3780	2.2	1215
40	3580	2.2	1228
60	3422	2.1	1249
75	3386	2.0	1258
100	3238	1.9	1267
120	3129	1.8	1275
150	3280	1.7	1281

Tab.7-6

10 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	4706	2.5	1200
20	4529	2.4	1210
40	4353	2.3	1221
60	4716	2.2	1235
75	4030	2.1	1248
100	3873	2.0	1255
120	3756	1.9	1259
150	3588	1.9	1265

Tab.7-7

12 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	6250	4.1	860
20	5850	4.0	870
40	5500	3.9	880
60	5300	3.8	890
75	5150	3.7	900
100	4900	3.6	910
120	4750	3.5	920
150	4550	3.4	930

Tab.7-8

15 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	6900	4.6	1000
20	6700	4.5	1010
40	6400	4.45	1020
60	6500	4.33	1030
75	6250	4.25	1040
100	6000	4.15	1050
120	5800	4.0	1060
150	5530	3.9	1070

Tab.7-9

18 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	8100	5.1	820
20	7750	5.0	829
40	7520	4.9	835
60	7300	4.8	844
75	7150	4.7	856
100	6850	4.6	864
120	6670	4.5	873
150	6400	4.4	885

Tab.7-10

20 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	8570	5.6	902
20	8440	5.5	906
40	8250	5.4	910
60	8150	5.3	914
75	8000	5.2	918
100	7810	5.1	920
120	7750	5.0	925
150	7600	4.9	928

Tab.7-11

25 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	12450	6.1	1000
75	11400	5.8	1002
125	10000	5.6	1005
170	10200	5.5	1008
200	9900	5.37	1010
225	9790	5.2	1015
250	9300	5.01	1017
300	8600	4.7	1022

■ Curve diagram of static pressure, air flow volumn.

6 Tons

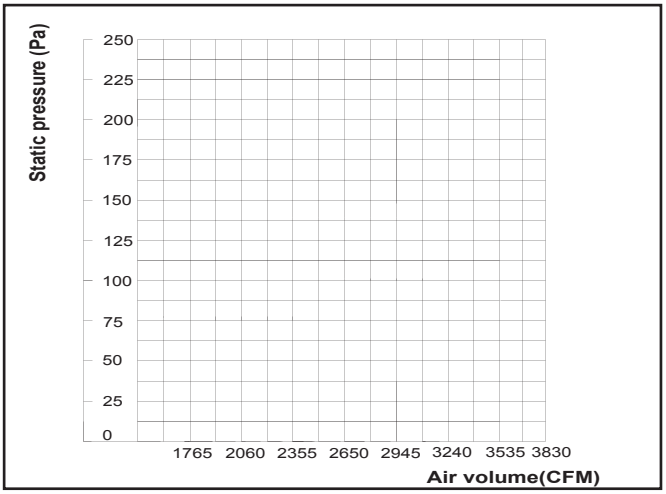


Fig.7-1

7 Tons

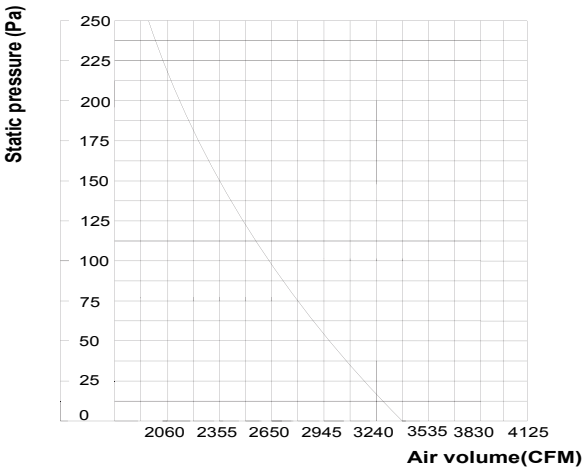


Fig.7-2

8 Tons

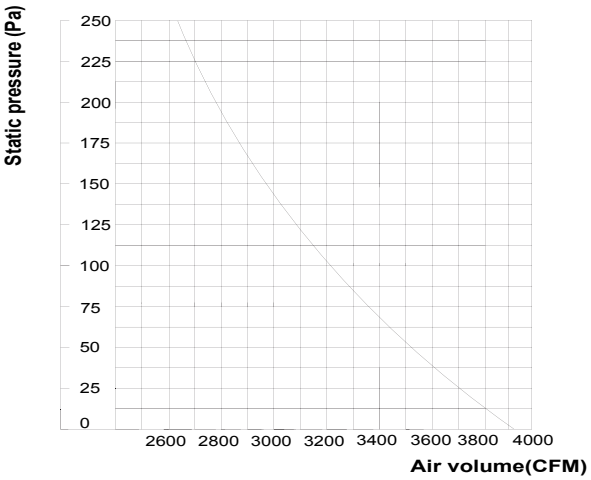


Fig.7-3

10 Tons

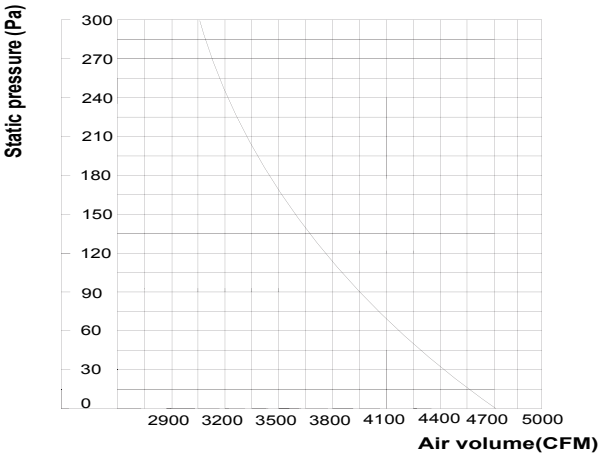


Fig.7-4

12 Tons

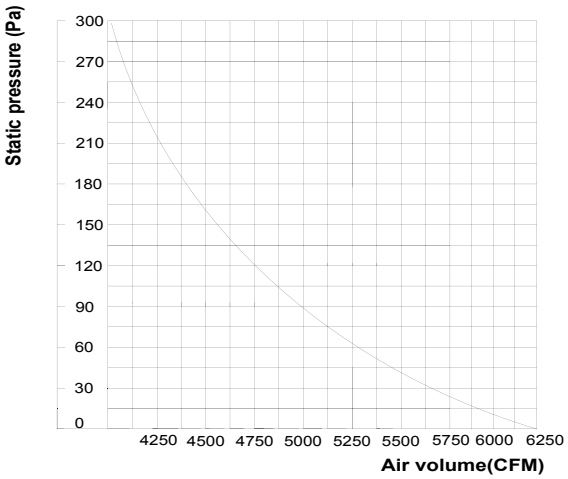


Fig.7-5

15 Tons

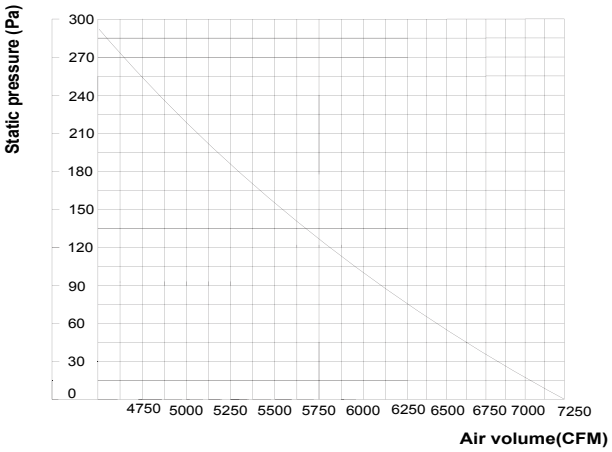


Fig.7-6

18 Tons

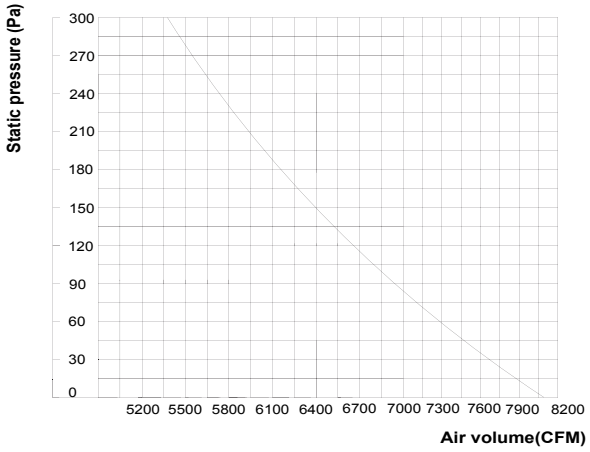


Fig.7-7

20 Tons

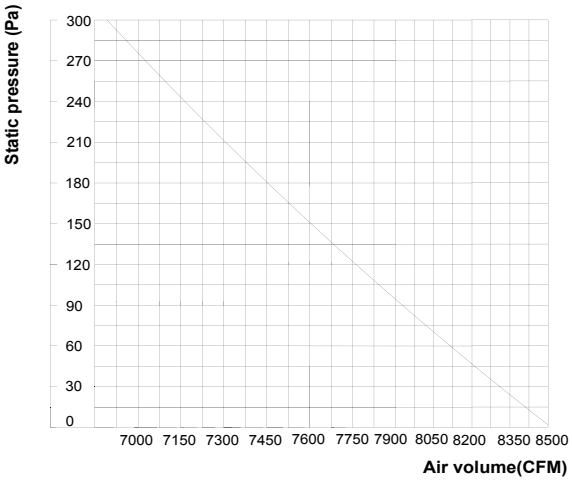


Fig.7-8

25 Tons

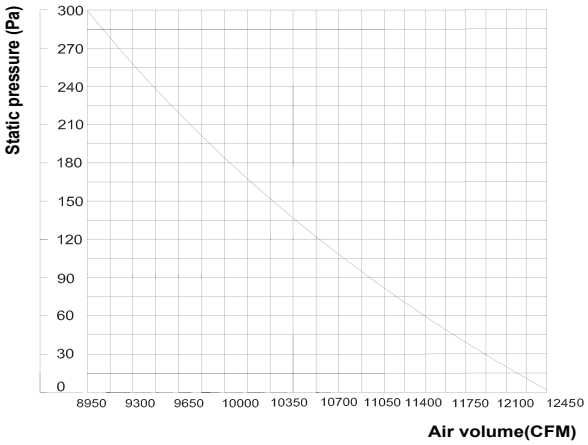


Fig.7-9

■ Parameter table for outdoor unit air volume

NOTE

Shield parts in below tables are standard working conditions for the unit.

Tab.7-12

6 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	5880	0.78	900
10	5647	0.79	889
20	5411	0.80	875

Tab.7-13

7 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	5880	0.78	900
10	5647	0.79	889
20	5411	0.80	875

Tab.7-14

8 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	7060	0.78	935
10	6765	0.79	926
20	6471	0.80	918

Tab.7-15

10 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	7060	0.78	935
10	6765	0.79	926
20	6471	0.80	918

Tab.7-16

12 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	9000	0.78×2	935
10	8800	0.79×2	926
20	8600	0.80×2	918

Tab.7-17

15 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	11000	0.78×2	935
10	9800	0.79×2	926
20	9600	0.80×2	918

Tab.7-18

18 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	12500	0.78×2	945
10	12000	0.79×2	938
20	11700	0.80×2	930

Tab.7-19

20 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	14000	1.3×2	940
10	13500	1.4×2	938
20	13100	1.5×2	930

Tab.7-20

25 Tons

Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
0	16765	1.7×2	910
10	16470	1.6×2	900
20	16176	1.5×2	890

7.3 Operating conditions

For proper performance, run the unit under the following temperature conditions:

Tab.7-21

Cooling operation	Outdoor temperature: 63°F to 126°F
	Room temperature: 63°F to 86°F
	Caution Room relative humidity less than 80%. If the unit operates in excess of this figure, the surface of the unit may attract condensation.

7.4 Capacity Data

■ Cooling capacity — 6 Tons

Tab.7-22

Ambient Temperature		Air Flow	CFM	2100				2400				2600				2800			
		Ent DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85	90
	85	61	MBH	67.2	69.3	74.2	77.4	69.1	72.3	76.2	79.1	70.6	74.4	77.8	80.1	72.2	75.9	78.8	80.9
			SHC	58.4	65.8	70.5	73.5	62.4	68.0	71.6	74.4	66.2	69.0	72.1	74.3	70.0	73.6	76.4	78.5
		67	MBH	75.7	76.0	76.6	77.7	76.5	77.0	77.8	79.3	77.1	77.9	78.8	80.3	77.6	78.3	79.3	81.1
			SHC	44.4	55.5	66.2	76.6	46.4	57.8	69.3	78.3	48.4	60.0	71.9	79.3	48.8	61.8	74.1	80.1
		73	MBH	79.1	80.0	80.8	81.7	79.4	80.3	81.4	82.2	79.8	80.6	81.6	82.7	80.0	81.0	81.9	82.9
			SHC	29.2	40.6	49.0	58.2	29.7	42.3	50.1	59.7	30.1	43.9	51.1	61.0	30.5	41.5	52.1	62.2
	95	61	MBH	62.2	65.3	70.6	75.1	64.1	68.3	73.6	77.5	65.8	70.9	75.8	78.9	67.2	73.2	77.1	79.9
			SHC	56.0	61.5	66.5	70.7	59.8	64.3	69.3	73.0	48.4	60.0	71.4	74.3	63.3	69.0	72.6	75.3
		67	MBH	72.2	72.5	73.4	75.2	72.9	73.4	76.2	77.8	74.5	75.0	76.3	79.2	75.2	75.9	77.4	80.2
			SHC	43.1	54.6	66.1	74.2	45.2	57.8	70.1	75.8	47.2	60.7	73.7	76.2	49.0	63.3	76.8	77.6
		73	MBH	78.1	78.6	79.4	80.1	78.5	79.1	79.9	80.8	78.9	79.4	80.3	81.2	79.1	80.1	80.8	81.6
			SHC	28.2	39.6	50.8	59.8	28.7	41.2	51.0	61.6	29.1	42.9	52.3	63.3	29.5	42.2	53.4	64.8
	105	61	MBH	57.0	61.0	66.4	71.8	58.8	63.9	69.7	74.6	60.5	66.5	72.4	76.6	62.5	68.8	74.2	77.9
			SHC	53.5	56.7	61.8	66.8	57.4	59.4	64.8	69.4	56.3	61.8	67.3	71.2	58.1	64.0	69.0	72.4
		67	MBH	66.8	67.4	68.5	72.1	68.4	69.0	70.4	74.6	69.6	70.3	72.6	76.9	70.6	71.5	74.3	78.2
			SHC	40.7	52.2	63.8	69.7	43.0	55.7	68.7	73.5	45.2	59.1	71.6	75.3	47.3	62.4	73.4	75.9
		73	MBH	75.9	76.2	76.4	77.0	76.5	76.9	77.3	78.0	77.0	77.4	78.0	78.8	77.3	78.0	78.5	79.4
			SHC	27.0	38.3	49.6	59.9	27.4	40.1	51.5	62.8	27.9	41.5	53.3	65.3	28.4	42.6	55.0	67.5
	115	61	MBH	51.7	56.6	62.1	67.7	53.6	59.3	64.2	70.9	55.7	61.7	67.8	73.2	57.6	63.9	70.0	74.9
			SHC	51.0	54.8	60.2	65.6	51.9	57.5	63.2	68.7	54.0	59.8	65.7	70.9	55.8	61.9	67.8	72.6
		67	MBH	51.0	56.8	62.4	67.9	62.2	63.0	66.2	71.2	63.4	64.5	67.9	73.5	64.5	65.8	70.1	75.3
			SHC	38.2	49.6	61.4	66.8	40.5	53.2	63.4	69.7	42.7	56.7	65.2	70.6	44.8	60.1	67.3	72.3
		73	MBH	72.1	72.3	72.7	72.9	73.1	73.5	73.8	74.2	73.8	74.0	74.4	75.3	74.3	74.8	75.2	76.3
			SHC	25.6	37.0	48.3	59.4	26.1	38.7	51.0	63.0	26.5	40.3	53.6	66.4	27.0	42.0	55.9	69.4
	125	61	MBH	45.3	47.2	49.0	50.6	46.3	48.3	50.1	51.7	46.6	48.6	50.5	52.1	47.0	48.9	51.0	53.4
			SHC	43.8	35.6	27.9	21.4	45.2	37.8	28.6	22.5	44.5	38.6	29.1	23.6	46.5	39.2	29.6	24.1
		67	MBH	50.0	50.9	51.7	52.2	51.1	52.1	52.8	53.4	51.5	52.5	53.2	53.8	51.8	52.9	53.7	55.0
			SHC	44.3	36.7	28.3	21.8	32.8	41.1	49.5	50.4	33.2	42.7	50.8	52.7	35.2	45.3	50.9	53.9
		73	MBH	53.8	54.5	55.3	56.7	55.0	55.8	56.5	57.2	55.2	56.1	56.8	57.3	56.3	57.5	58.2	59.3
			SHC	45.8	37.6	29.2	22.3	46.3	38.2	31.6	24.5	47.2	38.9	32.3	25.6	48.9	39.0	33.4	25.3

Notes: 1.All capacities are gross and have not considered indoor fan heat.To obtain NET cooling capacity subtract indoor fan heat.
2.MBH=Total Gross Capacity. (Unit:1000Btu/h)
3.SHC=Sensible Heat Capacity.(Unit:1000Btu/h)

■ Cooling capacity — 7 Tons

Tab.7-23

Ambient Temperature		Air Flow	CFM	2700				3000				3300				3600			
		Ent DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85	90
85	61		MBH	82.5	84.2	85.8	87.5	87.3	89.0	90.8	92.6	89.3	91.1	92.9	94.8	91.0	92.8	94.7	96.6
			SHC	72.7	80.4	85.3	87.5	77.4	84.3	88.2	91.1	82.0	84.5	87.9	92.3	86.2	90.3	93.5	95.2
	67		MBH	94.8	96.7	98.6	100.6	95.9	97.8	99.8	101.8	96.7	98.6	100.6	102.6	97.3	99.2	101.2	103.3
			SHC	55.6	68.8	81.8	94.3	58.0	72.6	85.4	96.3	59.5	73.8	88.2	100.1	60.8	75.8	90.7	100.8
	73		MBH	98.6	100.6	102.6	104.6	99.2	101.2	103.2	105.2	99.4	101.4	103.4	105.5	99.7	101.7	103.7	105.8
			SHC	36.8	51.0	62.0	72.4	37.3	50.7	62.3	75.1	37.8	54.8	63.3	75.4	38.3	56.7	64.2	76.8
95	61		MBH	78.6	80.2	81.8	83.4	81.0	82.6	84.3	86.0	83.3	85.0	86.7	88.4	85.3	87.0	88.7	90.5
			SHC	69.6	75.6	78.0	81.4	72.3	78.6	81.2	85.3	75.2	79.3	83.5	86.7	83.8	85.1	87.2	89.3
	67		MBH	85.6	87.3	89.1	90.8	87.1	94.0	96.6	98.0	91.4	96.2	98.1	99.8	93.2	98.1	100.9	101.9
			SHC	53.9	67.7	81.6	86.2	56.3	71.6	86.5	91.3	58.7	75.0	90.8	92.0	61.1	78.1	94.5	95.9
	73		MBH	97.8	99.8	101.8	103.8	98.3	100.3	102.3	104.3	98.7	100.7	102.7	104.7	98.6	100.6	102.6	104.6
			SHC	35.7	50.2	62.3	74.5	36.2	51.2	64.1	77.3	36.8	52.0	65.6	79.2	37.3	55.6	66.9	81.1
105	61		MBH	72.1	73.5	75.0	76.5	74.4	75.9	77.4	79.0	76.5	78.0	79.6	81.2	78.4	80.0	81.6	83.2
			SHC	66.4	68.3	71.3	73.2	71.2	72.4	76.3	78.4	75.3	76.5	77.9	80.4	76.1	78.6	80.3	82.5
	67		MBH	84.4	86.1	87.8	89.6	86.3	88.0	89.8	91.6	87.8	89.6	91.3	93.2	89.1	90.9	92.7	94.6
			SHC	51.0	65.0	79.2	86.3	53.7	66.2	85.0	90.3	56.3	73.3	90.6	92.3	58.8	77.2	90.1	92.4
	73		MBH	95.3	97.2	99.2	101.1	95.2	97.1	99.0	101.0	96.7	98.6	100.6	102.6	97.1	99.0	101.0	103.0
			SHC	34.2	48.9	64.2	76.8	34.1	50.4	65.6	78.8	35.4	52.2	67.2	80.9	35.9	53.4	68.9	83.5
115	61		MBH	65.3	66.6	67.9	69.3	67.2	68.5	69.9	71.3	69.8	71.2	72.6	74.1	72.1	73.5	75.0	76.5
			SHC	63.2	64.6	66.4	68.6	61.2	64.3	67.6	69.1	67.3	69.1	71.0	73.2	70.3	71.2	73.6	75.8
	67		MBH	76.7	78.2	79.8	81.4	78.5	80.1	81.7	83.3	80.1	81.7	83.3	85.0	81.5	83.1	84.8	86.5
			SHC	47.8	62.1	75.4	80.2	50.5	66.0	78.3	82.1	53.1	70.2	82.1	84.6	55.7	74.4	82.1	85.6
	73		MBH	90.8	92.6	94.5	96.4	86.0	87.7	89.5	91.3	92.9	94.8	96.7	98.6	93.6	95.5	97.4	99.3
			SHC	32.4	46.3	61.2	76.4	33.0	48.4	63.5	78.1	33.7	50.4	66.6	82.3	34.3	52.5	69.4	85.9
125	61		MBH	59.9	61.1	62.3	63.6	61.7	62.9	64.1	65.4	64.0	65.3	66.6	68.0	66.1	67.5	68.8	70.2
			SHC	58.0	59.3	60.9	62.9	56.1	59.0	62.0	63.4	61.7	63.4	65.1	67.2	64.5	65.3	67.5	69.5
	67		MBH	70.4	71.8	73.2	74.7	72.0	73.5	74.9	76.4	73.5	75.0	76.5	78.0	74.8	76.3	77.8	79.3
			SHC	43.9	57.0	69.2	73.6	46.3	60.6	71.8	75.3	48.7	64.4	75.3	77.6	51.1	68.3	75.3	78.5
	73		MBH	83.3	85.0	86.7	88.4	78.9	80.5	82.1	83.7	85.2	86.9	88.7	90.4	85.9	87.6	89.3	91.1
			SHC	29.7	42.5	56.1	70.1	30.3	44.4	58.3	71.7	30.9	46.2	61.1	75.5	31.5	48.2	63.7	78.8

Notes: 1.All capacities are gross and have not considered indoor fan heat.To obtain NET cooling capacity subtract indoor fan heat.
2.MBH=Total Gross Capacity. (Unit:1000Btu/h)
3.SHC=Sensible Heat Capacity. (Unit:1000Btu/h)

■ Cooling capacity — 8 Tons

Tab.7-24

Ambient Temperature		Air Flow	CFM	2700				3000				3400				3700				4000			
		Ent DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85	90
85	61		MBH	91.6	95.5	99.3	102.4	96.5	100.7	104.5	107.8	98.6	102.8	106.7	110.2	100.7	105.1	109.2	112.5	101.5	105.6	109.2	113.6
			SHC	71.4	82.1	90.1	94.9	76.8	88.1	96.6	101.7	80.8	92.8	101.7	107.1	83.2	95.6	104.5	110.3	85.2	98.1	107.3	111.9
	67		MBH	101.4	103.2	104.7	105.6	106.7	108.6	110.2	111.4	109.0	110.9	112.5	113.7	111.4	113.2	115.0	116.3	112.2	114.3	115.9	117.2
			SHC	54.1	67.9	81.7	90.6	58.1	72.8	87.7	97.3	61.2	76.6	92.3	102.6	63.2	79.8	96.3	106.4	64.7	81.0	97.5	108.4
	73		MBH	103.2	104.8	106.4	107.7	108.6	109.5	111.2	113.5	112.4	114.1	115.8	117.1	116.1	117.3	118.5	119.8	113.6	115.1	116.8	118.3
			SHC	23.9	44.5	61.6	74.9	25.8	48.3	67.9	86.1	27.2	56.3	74.6	97.8	33.1	69.2	94.7	110.6	36.1	64.3	89.3	105.8
95	61		MBH	88.5	92.3	95.8	99.0	93.1	97.1	100.8	104.2	95.1	99.2	102.9	106.3	97.2	101.4	105.2	108.7	97.9	102.2	106.1	109.5
			SHC	72.6	83.2	91.7	96.3	78.2	89.8	98.6	103.7	82.4	94.6	98.1	102.1	84.8	97.3	100.9	104.3	87.0	98.1	103.8	107.3
	67		MBH	97.8	99.6	101.0	102.3	102.7	104.8	106.3	107.4	105.1	107.0	108.5	109.7	107.4	109.4	111.0	112.1	108.3	110.2	111.8	113.0
			SHC	55.2	68.7	83.4	92.4	59.2	74.3	89.4	99.8	62.4	78.1	94.1	104.5	64.2	80.5	96.8	107.8	65.9	83.2	99.8	111.4
	73		MBH	105.1	106.3	107.5	109.1	110.7	111.8	112.9	114.1	113.2	114.6	116.3	118.7	115.1	116.3	117.6	118.9	114.1	115.3	116.7	118.1
			SHC	26.4	55.2	67.8	88.9	26.1	48.9	69.8	82.3	30.8	67.2	94.3	106.7	34.3	72.1	102.7	114.3	30.1	55.3	76.4	95.6
105	61		MBH	83.7	87.5	90.8	93.8	88.1	91.9	95.4	98.5	90.1	93.8	97.4	100.6	92.0	95.9	99.7	102.8	92.7	96.7	100.3	103.6
			SHC	69.7	80.0	87.7	92.3	74.7	85.8	94.1	98.5	78.7	90.4	93.5	96.5	81.0	93.0	95.7	98 6	83.2	95.5	98.2	101.5
	67		MBH	92.6	94.2	95.8	97.1	97.4	99.1	100.5	101.7	99.5	101.2	102.7	103.8	101.7	103.5	105.0	106.1	102.5	104.3	105.7	106.9
			SHC	52.8	66.1	79.5	88.4	56.6	70.8	86.1	98.3	59.6	74.7	89.9	99.8	61.5	76.8	92.6	102.8	63.0	78.9	95.2	105.6
	73		MBH	94.5	96.1	97.8	99.4	104.1	105.6	107.2	108.6	106.9	108.3	109.7	111.2	105.9	107.2	108.4	109.8	106.3	107.5	108.9	110.2
			SHC	23.3	44.7	59.8	72.6	82.3	87.1	90.6	99.8	31.2	67.4	98.6	106.8	35.2	54.8	73.2	93.6	28.9	53.8	74.6	88.5
115	61		MBH	78.3	81.6	84.7	87.6	82.3	86.1	89.6	92.3	84.1	87.7	92.1	94.0	85.9	89.7	93.0	96.1	86.6	90.4	93.8	96.7
			SHC	67.2	77.1	83.5	86.6	72.0	82.7	89.1	92.0	75.8	87.1	91.0	92.7	78.1	82.7	91.0	93.1	80.1	83.4	91.8	95.7
	67		MBH	86.5	88.1	89.3	90.6	91.0	92.6	94.0	95.4	92.9	94.6	96.0	97.1	95.0	96.7	98.1	99.2	95.7	97.5	98.9	99.9
			SHC	50.9	63.7	76.7	85.2	54.5	68.7	82.3	94.6	57.4	71.9	86.6	96.2	59.1	74.0	89.2	95.3	60.7	76.0	91.5	96.5
	73		MBH	95.1	96.4	97.8	99.8	97.8	99.3	101.4	103.6	99.9	101.3	103.4	105.2	101.1	102.6	103.9	105.7	102.5	103.7	104.8	106.2
			SHC	22.5	41.8	57.7	70.5	28.3	53.2	89.1	101.6	32.1	68.4	98.9	103.6	35.7	68.9	93.4	104.3	31.1	56.3	72.4	85.2
125	61		MBH	71.2	74.2	77.0	79.6	74.8	78.3	81.5	83.9	76.5	79.7	83.7	85.5	78.1	81.5	84.5	87.4	78.7	82.2	85.3	87.9
			SHC	61.1	70.1	76.8	78.5	65.5	75.2	81.0	83.6	68.9	79.2	82.7	84.3	71.0	79.6	84.5	87.4	72.8	80.2	83.3	85.9
	67		MBH	78.6	80.1	81.2	82.4	82.7	84.2	85.5	86.7	84.5	86.0	87.3	88.3	86.4	87.9	89.2	90.2	87.0	88.6	89.9	90.8
			SHC	46.3	57.9	69.7	77.5	49.5	62.5	74.8	86.0	52.2	65.4	78.7	87.5	53.7	67.3	81.1	87.2	55.2	69.1	83.2	88.8
	73		MBH	86.5	87.6	88.9	90.7	88.9	90.3	92.2	94.2	90.8	92.1	94.0	95.6	91.9	93.3	94.5	96.1	93.2	94.3	95.3	96.5
			SHC	20.5	38.0	52.5	64.1	25.7	48.4	81.0	92.4	29.2	62.2	89.9	94.2	32.5	62.6	84.9	94.8	28.3	51.2	65.8	77.5

Notes:1.All capacities are gross and have not considered indoor fan heat.To obtain NET cooling capacity subtract indoor fan heat.
2.MBH=Total Gross Capacity. (Unit:1000Btu/h)
3.SHC=Sensible Heat Capacity. (Unit:1000Btu/h)

■ Cooling capacity — 10 Tons

Tab.7-25

Ambient Temperature		Air Flow	CFM	3600				4000				4400				4800			
		Ent DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85	90
85	61		MBH	110.9	113.1	115.4	117.7	113.8	116.1	118.4	120.8	116.5	118.8	121.2	123.6	118.6	121.0	123.4	125.9
			SHC	96.8	98.7	100.7	102.7	103.2	105.3	107.4	109.5	109.2	111.4	113.6	115.9	114.7	117.0	119.3	121.7
	67		MBH	123.4	125.9	128.4	131.0	124.6	127.1	129.6	132.2	125.7	128.2	130.8	133.4	126.3	130.0	131.4	134.0
			SHC	73.2	92.0	108.3	124.8	75.6	94.3	112.8	128.5	78.0	97.3	116.5	130.4	79.6	99.7	119.4	131.2
	73		MBH	127.9	130.5	133.1	135.7	128.3	130.9	133.5	136.2	128.6	131.2	133.8	136.5	129.8	132.4	135.0	137.7
			SHC	47.7	64.9	79.6	95.3	48.3	65.8	81.2	96.7	49.0	72.1	82.4	98.4	49.7	75.6	84.2	101.3
95	61		MBH	102.8	104.9	107.0	109.1	105.9	108.0	110.2	112.4	108.9	111.1	113.3	115.6	111.1	113.1	115.6	117.9
			SHC	92.7	94.6	96.4	98.4	99.2	101.2	103.2	105.3	105.4	107.5	109.7	111.9	100.5	102.5	104.6	106.7
	67		MBH	118.7	121.1	123.5	126.0	122.5	127.0	128.5	130.1	123.8	128.0	128.7	132.3	125.1	129.4	130.0	133.3
			SHC	70.8	89.8	108.6	123.4	74.3	94.8	114.0	124.3	77.4	99.3	120.3	128.4	80.2	103.2	125.7	128.2
	73		MBH	126.8	129.3	131.9	134.6	127.1	129.6	132.2	134.9	127.8	130.4	133.0	135.6	128.1	130.7	133.3	135.9
			SHC	46.3	65.4	81.5	97.8	47.2	66.7	84.3	101.9	47.5	67.6	85.8	104.7	48.4	68.7	87.9	106.8
105	61		MBH	94.5	96.4	98.3	100.3	97.8	99.8	101.8	103.8	99.8	101.8	103.8	105.9	103.5	105.6	107.7	109.8
			SHC	88.6	90.4	92.2	94.0	95.2	97.1	99.0	101.0	93.4	95.3	97.2	99.1	101.2	103.2	105.3	107.4
	67		MBH	110.3	112.5	114.8	117.1	112.9	115.2	117.5	119.8	114.6	116.9	119.2	121.6	116.3	118.6	121.0	123.4
			SHC	67.6	86.4	105.9	115.6	71.3	92.1	113.7	117.9	74.2	98.3	115.5	117.6	77.8	102.8	115.6	121.3
	73		MBH	123.8	126.3	128.8	131.4	124.6	127.1	129.6	132.2	125.2	127.7	130.3	132.9	125.8	128.3	130.9	133.5
			SHC	44.3	63.2	81.0	98.3	45.2	65.6	85.3	103.7	45.7	67.5	86.9	106.8	46.3	69.7	91.2	110.4
115	61		MBH	86.3	88.0	89.8	91.6	89.2	91.0	92.8	94.7	92.3	94.1	96.0	97.9	95.8	97.7	99.7	101.7
			SHC	84.6	86.3	88.0	89.8	86.2	87.9	89.7	91.5	90.2	92.0	93.8	95.7	94.3	96.2	98.1	100.1
	67		MBH	101.3	103.3	105.4	107.5	103.2	107.0	107.4	109.5	105.6	107.7	109.9	112.1	108.2	110.4	112.6	114.8
			SHC	63.5	83.2	102.1	104.1	67.3	88.2	105.3	107.4	70.8	94.1	107.3	110.5	74.1	99.6	110.3	112.5
	73		MBH	119.2	121.6	124.0	126.5	120.1	122.5	125.0	127.5	120.8	123.2	125.7	128.2	121.1	123.5	126.0	128.5
			SHC	42.2	61.3	80.1	98.7	42.9	64.1	84.3	104.1	43.7	66.8	87.9	109.3	44.3	69.1	91.2	112.7
125	61		MBH	78.5	80.0	81.6	83.3	81.1	82.7	84.4	86.1	83.9	85.6	87.8	89.0	87.1	88.8	90.6	92.4
			SHC	76.9	78.4	80.0	81.6	78.4	79.9	81.5	83.2	82.0	83.6	85.3	87.0	85.7	87.4	89.2	91.0
	67		MBH	92.1	93.9	95.8	97.7	93.8	97.9	98.2	99.6	96.0	98.1	99.9	101.9	98.4	100.3	102.3	104.4
			SHC	57.7	75.6	92.8	94.7	61.2	80.2	95.7	97.6	64.4	85.5	97.5	100.5	67.4	90.5	100.3	102.3
	73		MBH	108.4	110.5	112.7	115.0	109.2	111.4	113.6	115.9	109.8	112.0	114.3	116.5	110.1	112.3	114.5	116.8
			SHC	38.4	55.7	72.8	89.7	39.0	58.3	76.6	94.6	39.7	60.7	79.9	99.4	40.3	62.8	82.9	102.5

Notes:1.All capacities are gross and have not considered indoor fan heat.To obtain NET cooling capacity subtract indoor fan heat.
2.MBH=Total Gross Capacity. (Unit:1000Btu/h)
3.SHC=Sensible Heat Capacity. (Unit:1000Btu/h)

■ Cooling capacity — 12 Tons

Tab.7-26

Ambient Temperature		Air Flow	CFM	4500				5000				5500				6000			
		Ent DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85	90
85	61		MBH	133.0	134.6	140.6	148.5	136.6	139.5	145.5	153.4	138.1	141.6	150.5	157.4	143.6	145.5	153.5	159.4
			SHC	106.9	126.7	135.0	142.6	112.8	134.6	141.1	148.8	118.8	134.5	143.0	149.5	123.8	138.2	145.8	151.4
	67		MBH	149.0	150.8	152.5	154.6	153.4	154.5	155.4	156.4	155.3	156.5	157.4	158.6	156.5	157.4	159.4	160.4
			SHC	85.1	103.9	121.8	140.6	88.9	107.9	127.7	146.5	90.4	110.9	131.7	152.5	92.4	113.9	135.6	157.4
	73		MBH	157.4	160.4	162.4	164.4	159.2	161.4	164.4	166.3	161.2	163.4	165.3	167.3	163.4	166.0	168.0	170.0
			SHC	58.7	78.7	95.1	110.9	59.8	80.5	97.2	112.7	60.9	81.2	98.9	116.8	61.9	82.1	100.1	120.0
95	61		MBH	124.7	127.7	133.7	142.6	126.3	131.7	139.6	147.5	130.7	133.7	143.6	151.5	133.7	138.6	147.5	154.5
			SHC	101.9	121.8	124.7	131.6	107.9	126.4	134.0	141.6	113.9	127.0	136.4	143.9	118.8	133.1	141.6	148.3
	67		MBH	139.6	141.6	143.6	146.5	145.5	150.0	151.5	152.5	151.5	153.6	154.6	156.4	152.0	155.0	157.0	158.0
			SHC	81.2	100.0	118.8	137.6	84.6	104.9	124.8	145.5	87.9	108.0	130.7	151.5	90.3	112.9	135.6	156.0
	73		MBH	153.5	155.4	157.3	159.4	154.6	156.3	158.7	161.4	156.0	158.0	160.0	161.0	159.0	162.0	164.0	166.0
			SHC	56.1	75.7	93.3	109.9	57.3	78.3	95.8	113.9	58.4	79.6	98.1	116.8	59.5	80.9	100.0	119.8
105	61		MBH	116.0	119.0	125.0	135.0	120.0	123.0	133.0	139.0	122.0	127.0	138.0	147.0	125.0	132.0	142.0	150.0
			SHC	97.2	104.0	113.0	125.0	104.0	111.0	122.0	129.0	110.0	116.0	128.0	137.0	113.9	128.0	137.7	145.5
	67		MBH	133.0	135.0	138.0	139.0	134.0	137.0	141.0	143.0	141.0	143.0	145.0	149.0	144.0	146.0	148.0	153.1
			SHC	76.9	96.0	114.9	134.7	88.6	101.0	121.8	143.0	83.4	105.9	127.7	141.0	86.4	109.9	133.7	150.0
	73		MBH	151.0	152.0	153.0	154.0	153.0	154.0	155.0	157.0	155.0	156.0	157.0	158.0	156.0	157.0	158.0	160.0
			SHC	53.3	72.5	90.8	108.0	54.5	75.1	93.9	112.9	55.5	77.5	96.4	115.8	56.6	78.5	98.8	121.0
115	61		MBH	106.0	110.0	120.0	130.0	109.0	115.0	125.0	135.0	112.0	120.0	129.0	138.0	115.0	123.0	134.0	143.0
			SHC	93.1	106.7	116.4	126.1	98.9	111.6	121.3	131.0	104.0	115.2	123.8	132.5	103.9	110.7	120.6	128.7
	67		MBH	125.0	127.0	128.0	130.0	126.0	129.0	131.0	133.0	133.0	135.0	138.0	140.0	136.0	138.0	140.0	145.0
			SHC	80.0	92.2	111.0	127.0	84.0	97.5	118.0	121.0	88.0	102.0	123.0	125.0	82.8	107.0	131.0	143.0
	73		MBH	141.0	143.0	145.0	146.0	145.0	147.0	148.0	149.0	148.0	149.0	150.0	151.0	149.0	150.0	151.0	152.0
			SHC	50.5	69.6	88.5	107.0	51.6	73.0	92.0	111.0	54.0	75.0	96.0	117.0	54.0	78.0	98.0	119.0
125	61		MBH	101.9	104.4	108.0	109.4	104.8	107.1	109.0	111.6	109.0	110.9	113.1	115.4	112.7	115.1	117.7	119.7
			SHC	93.5	83.9	69.7	66.8	96.5	89.9	74.3	68.6	97.2	91.0	75.2	69.3	99.7	92.7	76.2	70.0
	67		MBH	103.4	105.9	109.5	110.8	121.2	123.8	126.2	129.1	123.9	126.6	129.4	131.7	127.2	130.0	132.4	135.3
			SHC	96.1	85.2	75.1	67.6	99.9	91.5	76.4	69.5	101.4	92.8	77.8	70.3	103.3	94.2	78.9	71.6
	73		MBH	106.7	109.3	111.9	114.4	141.1	143.7	146.5	149.6	141.9	145.7	147.7	150.6	142.2	145.9	148.4	151.0
			SHC	103.0	89.9	80.1	69.7	103.8	93.1	77.8	70.7	105.4	96.3	81.2	71.7	107.2	97.2	82.5	72.8

Notes: 1.All capacities are gross and have not considered indoor fan heat.To obtain NET cooling capacity subtract indoor fan heat.
2.MBH=Total Gross Capacity. (Unit:1000Btu/h)
3.SHC=Sensible Heat Capacity. (Unit:1000Btu/h)

■ Cooling capacity — 15 Tons

Tab.7-27

Ambient Temperature		Air Flow	CFM	5500				6000				6500				7000			
		Ent DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85	90
85	61		MBH	163.6	165.6	172.9	182.7	168.0	171.6	179.0	188.7	169.9	174.2	185.1	193.6	176.6	179.0	188.8	196.1
			SHC	131.5	155.8	166.0	175.3	138.7	165.6	173.6	183.0	146.1	167.2	177.7	185.9	152.3	171.8	181.3	188.2
	67		MBH	183.3	185.5	187.6	190.2	188.7	190.0	191.1	192.4	191.0	192.5	193.6	195.1	192.5	193.6	196.1	197.3
			SHC	104.7	127.8	149.8	172.9	109.3	132.7	157.1	180.2	111.2	136.4	162.0	187.6	113.7	140.1	166.8	193.6
	73		MBH	193.6	197.3	199.8	202.2	195.8	198.5	202.2	204.5	198.3	201.0	203.3	205.8	201.0	204.2	206.6	209.1
			SHC	72.2	96.8	117.0	136.4	73.6	99.0	119.6	138.6	74.9	99.9	121.6	143.7	76.1	101.0	123.1	147.6
95	61		MBH	153.4	157.1	164.5	175.4	155.3	162.0	171.7	181.4	160.8	164.5	176.6	186.3	164.5	170.5	181.4	190.0
			SHC	125.3	149.8	159.5	170.1	132.7	157.1	166.6	176.0	140.1	159.5	171.3	180.8	146.1	165.4	176.0	184.3
	67		MBH	171.7	174.2	176.6	180.2	179.0	180.0	182.7	183.9	185.1	186.5	187.7	188.7	185.7	188.2	189.8	197.9
			SHC	99.9	123.0	146.1	169.2	104.1	129.0	153.5	179.0	108.1	132.8	160.8	186.3	111.1	138.9	166.8	188.9
	73		MBH	188.8	191.1	193.5	196.1	190.2	192.2	195.2	198.5	191.9	194.3	196.8	198.0	195.6	199.3	201.7	204.2
			SHC	69.0	93.1	114.8	135.2	70.5	96.3	117.8	140.1	71.8	97.9	120.7	143.7	73.2	99.5	123.0	147.4
105	61		MBH	142.7	146.4	153.8	166.1	147.6	151.3	163.6	171.0	150.1	156.2	169.7	180.8	153.8	162.4	174.7	184.5
			SHC	119.6	140.5	147.6	159.4	127.9	145.2	157.0	164.1	135.3	151.5	164.6	173.2	140.1	157.5	169.4	179.0
	67		MBH	163.6	166.1	169.7	171.0	164.8	168.5	173.4	175.9	173.4	175.9	178.4	180.8	177.1	179.6	182.0	186.5
			SHC	94.6	118.1	141.3	165.7	109.0	124.2	149.8	170.6	102.6	130.3	157.1	175.4	106.3	135.2	164.5	184.5
	73		MBH	185.7	187.0	188.2	189.4	188.2	189.4	190.7	193.1	190.7	191.9	193.1	194.3	191.9	193.1	194.3	196.8
			SHC	65.6	89.2	111.7	132.8	67.0	92.3	115.5	138.9	68.3	95.3	118.6	142.4	69.6	96.6	121.5	148.8
115	61		MBH	130.4	135.3	147.6	159.9	134.1	141.5	153.8	166.1	137.8	140.4	150.9	172.2	141.5	151.3	164.8	175.9
			SHC	114.5	131.2	143.2	155.1	121.6	135.8	147.6	159.4	127.9	136.2	146.9	167.0	127.3	146.8	159.9	170.6
	67		MBH	153.8	156.2	157.4	159.9	155.0	158.7	161.1	163.6	163.6	166.1	169.7	174.0	167.3	169.7	172.2	175.9
			SHC	98.4	113.4	136.5	159.9	103.3	119.9	145.1	163.6	108.2	125.5	151.3	168.8	101.8	131.6	161.1	172.4
	73		MBH	173.4	175.9	178.4	179.6	178.4	180.8	182.0	183.3	182.0	183.3	184.5	185.7	183.3	184.5	185.7	187.0
			SHC	62.1	85.6	108.9	131.6	63.5	89.8	113.2	136.5	66.4	92.3	118.1	143.9	66.4	95.9	120.5	146.4
125	61		MBH	125.4	130.1	141.9	152.1	128.9	136.0	147.8	159.7	132.5	140.7	153.8	165.6	136.0	145.5	158.5	169.1
			SHC	110.1	126.2	137.7	147.5	117.0	131.9	143.4	154.9	123.0	136.5	149.1	160.6	122.4	139.7	152.1	162.4
	67		MBH	147.8	150.2	151.4	153.8	149.0	152.6	154.9	157.3	157.3	159.7	163.2	167.1	160.8	163.2	165.6	171.1
			SHC	87.6	109.0	131.3	153.8	99.0	115.3	139.6	152.6	104.1	120.6	145.5	162.1	97.9	126.5	154.9	166.0
	73		MBH	166.8	169.1	171.5	172.7	171.5	173.9	175.0	176.2	175.0	176.2	177.4	178.6	176.2	177.4	178.6	179.8
			SHC	59.7	82.3	104.7	126.5	61.0	86.3	108.8	131.3	63.9	88.7	113.5	138.4	63.9	92.3	115.9	140.7

Notes: 1.All capacities are gross and have not considered indoor fan heat.To obtain NET cooling capacity subtract indoor fan heat.
2.MBH=Total Gross Capacity. (Unit:1000Btu/h)
3.SHC=Sensible Heat Capacity. (Unit:1000Btu/h)

■ Cooling capacity — 18 Tons

Tab.7-28

Ambient Temperature		Air Flow		CFM	6500				7000				7500				8000			
		Ent	DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85	90
	85	61		MBH	191.4	193.7	202.3	213.7	196.6	200.7	209.4	220.7	198.7	203.8	216.6	226.5	206.6	209.4	220.9	229.4
				SHC	153.8	182.3	196.3	207.3	162.3	193.7	203.1	214.1	171.0	197.6	210.1	219.7	178.1	203.1	214.3	222.5
		67		MBH	214.4	217.0	219.4	222.5	220.7	222.3	223.6	225.1	223.5	225.2	226.5	228.2	225.2	226.5	229.4	230.8
				SHC	122.5	149.5	175.3	202.3	127.9	155.3	183.8	210.8	130.1	159.6	189.5	219.4	133.0	163.9	195.1	226.5
		73		MBH	226.5	230.8	233.7	236.6	229.1	232.3	236.6	239.3	232.0	235.1	237.9	240.7	235.1	238.9	241.8	244.6
				SHC	84.5	113.2	136.8	159.6	86.1	115.8	139.9	162.2	87.6	116.8	142.3	168.1	89.1	118.1	144.0	172.7
	95	61		MBH	179.4	183.8	192.4	205.2	181.7	189.5	200.9	212.3	188.1	192.4	206.6	218.0	192.4	199.4	212.3	222.3
				SHC	146.6	175.3	186.6	199.0	155.3	183.8	194.9	205.9	163.9	186.6	200.4	211.5	171.0	193.5	205.9	215.7
		67		MBH	200.9	203.8	206.6	208.0	207.0	210.0	213.7	215.1	216.6	218.2	219.6	220.7	217.3	220.2	222.0	224.5
				SHC	116.8	143.9	171.0	198.0	121.7	151.0	179.6	209.4	126.5	155.4	188.1	218.0	129.9	162.5	195.1	219.5
		73		MBH	220.9	223.6	226.4	229.4	222.5	224.9	228.4	232.3	224.5	227.4	230.2	231.7	228.8	233.1	236.0	238.9
				SHC	80.7	108.9	134.3	158.1	82.5	112.7	137.9	163.9	84.0	114.5	141.2	168.1	85.6	116.4	143.9	172.4
	105	61		MBH	166.9	171.2	179.9	194.3	172.7	177.0	191.4	200.0	175.6	182.8	198.6	211.5	179.9	189.9	204.3	215.9
				SHC	139.9	166.1	174.5	188.4	149.7	171.7	185.6	194.0	158.3	177.3	192.6	205.2	163.9	186.1	200.3	211.5
		67		MBH	191.4	194.3	198.6	200.0	192.8	197.1	202.9	205.8	202.9	205.8	208.7	211.5	207.2	210.1	213.0	217.9
				SHC	110.7	138.1	165.3	193.8	127.5	145.3	175.3	199.6	120.0	152.4	183.8	201.5	124.3	158.1	192.4	210.9
		73		MBH	217.3	218.7	220.2	221.6	220.2	221.6	223.0	225.9	223.0	224.5	225.9	227.4	224.5	225.9	227.4	230.2
				SHC	76.7	104.3	130.7	155.4	78.4	108.0	135.1	162.5	79.9	111.5	138.7	166.6	81.4	113.0	142.2	174.1
	115	61		MBH	152.5	158.3	172.7	187.1	156.9	165.5	179.9	194.3	161.2	171.2	187.1	201.5	165.5	177.0	192.8	205.8
				SHC	134.0	145.3	161.7	170.1	142.3	155.5	168.9	184.3	149.7	161.2	167.1	191.5	155.5	167.0	182.8	195.8
		67		MBH	179.9	182.8	184.2	187.1	181.3	185.6	188.5	191.4	191.4	194.3	198.6	201.5	195.7	198.6	201.5	207.8
				SHC	115.1	132.7	159.7	167.1	120.9	140.3	169.8	181.4	126.6	146.8	177.0	191.5	119.1	154.0	188.5	200.8
		73		MBH	202.9	205.8	208.7	210.1	208.7	211.5	213.0	214.4	213.0	214.4	215.9	217.3	214.4	215.9	217.3	218.7
				SHC	72.7	100.2	127.4	154.0	74.3	105.0	132.4	159.7	77.7	107.9	138.1	168.4	77.7	112.2	141.0	171.2
	125	61		MBH	145.3	150.8	164.5	178.2	149.4	157.6	171.3	185.0	153.5	163.1	172.8	191.9	157.6	168.6	183.6	196.0
				SHC	127.6	146.2	159.5	172.8	135.5	152.9	166.2	179.5	142.5	158.2	172.8	186.1	140.3	163.5	178.1	190.1
		67		MBH	171.3	174.1	175.4	180.2	172.7	176.8	179.5	182.3	182.3	185.0	189.1	192.9	186.4	189.1	191.9	196.0
				SHC	109.6	126.4	152.1	178.2	115.1	133.6	161.7	171.3	120.6	139.8	168.6	181.9	113.5	146.6	179.5	186.0
		73		MBH	193.2	196.4	198.7	200.1	198.7	201.4	202.8	204.2	202.8	204.2	205.6	206.9	204.2	205.6	206.9	208.3
				SHC	69.2	95.4	121.3	146.6	70.7	100.0	126.1	152.1	74.0	102.8	131.6	160.3	74.0	106.9	134.3	163.1

Notes: 1.All capacities are gross and have not considered indoor fan heat.To obtain NET cooling capacity subtract indoor fan heat.
2.MBH=Total Gross Capacity. (Unit:1000Btu/h)
3.SHC=Sensible Heat Capacity. (Unit:1000Btu/h)

■ Cooling capacity — 20 Tons

Tab.7-29

Ambient Temperature		Air Flow	CFM	7500				8000				8500				9000		
		Ent DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85
	85	61	MBH	216.1	218.7	228.5	241.3	222.0	226.7	236.4	249.3	224.4	230.1	244.6	255.8	233.4	236.4	249.4
			SHC	173.7	205.9	221.6	234.1	183.3	218.7	229.3	241.8	193.1	223.2	237.2	248.1	201.2	229.3	242.0
		67	MBH	242.1	245.1	247.8	251.2	249.3	251.1	252.5	254.2	252.4	254.3	255.8	257.7	254.3	255.8	259.0
			SHC	138.3	168.8	197.9	228.5	144.5	175.3	207.5	238.1	146.9	180.2	214.0	247.8	150.2	185.1	220.4
		73	MBH	255.8	260.7	263.9	267.2	258.7	262.3	267.2	270.2	262.0	265.5	268.6	271.9	265.5	269.8	273.0
			SHC	95.4	127.9	154.5	180.2	97.2	130.8	158.0	183.1	99.0	132.0	160.7	189.8	100.6	133.4	162.7
	95	61	MBH	202.6	207.5	217.3	231.7	205.2	214.0	226.9	239.7	212.4	217.3	233.4	246.2	217.3	225.2	239.7
			SHC	165.6	197.9	210.7	224.8	175.3	205.5	217.8	230.1	185.1	210.7	226.3	238.8	193.1	218.5	232.5
		67	MBH	226.9	230.1	233.4	238.1	236.4	240.0	241.3	242.9	244.6	246.4	248.0	249.3	245.4	248.6	250.7
			SHC	132.0	162.5	193.1	223.6	137.5	170.5	202.8	236.4	142.8	175.5	212.4	246.2	146.7	183.5	220.4
		73	MBH	249.4	252.5	255.6	259.0	251.2	254.0	257.9	262.3	253.5	256.8	260.0	261.6	258.4	263.3	266.5
			SHC	91.2	123.0	151.6	178.6	93.1	127.2	155.7	185.1	94.9	129.4	159.4	189.8	96.7	131.5	162.5
	105	61	MBH	188.5	193.4	203.1	219.4	195.0	199.9	216.1	225.9	198.3	206.4	224.3	238.9	203.1	214.5	230.8
			SHC	158.0	187.6	197.0	212.8	169.0	193.9	209.6	219.1	178.8	200.2	217.5	231.7	185.1	208.1	223.8
		67	MBH	216.1	219.4	224.3	225.9	217.8	222.6	229.1	232.4	229.1	232.4	235.6	238.9	234.0	237.3	240.5
			SHC	125.0	156.0	186.7	218.9	144.0	164.1	197.9	209.1	135.5	172.1	207.5	238.9	140.4	178.6	217.3
		73	MBH	245.4	247.0	248.6	250.3	248.6	250.3	251.9	255.1	251.9	253.5	255.1	256.8	253.5	255.1	256.8
			SHC	86.6	117.8	147.6	175.5	88.6	122.0	152.6	183.5	90.2	125.9	156.7	188.2	92.0	127.6	160.6
	115	61	MBH	172.3	178.8	195.0	211.3	177.1	186.9	203.1	219.4	182.0	193.4	211.3	227.5	186.9	199.9	217.8
			SHC	151.3	173.4	189.2	204.9	160.7	181.3	197.0	212.8	169.0	187.6	204.9	220.7	180.9	193.9	211.2
		67	MBH	203.1	206.4	208.0	211.3	204.8	209.6	212.9	216.1	216.1	219.4	224.3	227.5	221.0	224.3	227.5
			SHC	130.0	149.8	180.4	211.3	136.5	158.4	191.8	216.1	143.0	165.8	199.9	227.5	134.6	173.9	212.9
		73	MBH	229.1	232.4	235.6	237.3	235.6	238.9	240.5	242.1	240.5	242.1	243.8	245.4	242.1	243.8	245.4
			SHC	82.1	113.1	143.8	173.9	83.9	118.6	149.5	180.4	87.8	121.9	156.0	190.1	87.8	126.8	159.3
	125	61	MBH	162.5	168.6	184.0	199.3	167.1	176.3	191.6	207.0	171.6	182.4	199.3	214.6	176.3	188.6	205.4
			SHC	147.2	163.6	178.4	193.3	151.6	171.0	185.9	200.7	159.4	177.0	193.3	208.2	170.3	182.9	199.3
		67	MBH	191.6	194.7	196.2	210.3	193.2	197.8	200.8	203.9	203.9	207.0	211.6	214.6	208.5	211.6	214.6
			SHC	122.6	141.3	170.2	189.3	128.8	149.5	180.9	199.8	134.9	156.4	188.6	210.3	126.9	164.0	200.8
		73	MBH	216.2	219.2	222.3	223.8	222.3	225.4	226.9	228.4	226.9	228.4	230.0	231.5	228.4	230.0	231.5
			SHC	77.4	106.7	135.7	164.0	79.1	111.9	141.0	170.2	82.8	115.0	147.2	179.4	82.8	119.6	150.2

Notes: 1.All capacities are gross and have not considered indoor fan heat.To obtain NET cooling capacity subtract indoor fan heat.
2.MBH=Total Gross Capacity.(Unit:1000Btu/h)
3.SHC=Sensible Heat Capacity.(Unit:1000Btu/h)

■ Cooling capacity — 25 Tons

Tab.7-30

Ambient Temperature		Air Flow	CFM	9500				10000				10500				11000			
		Ent DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90	75	80	85	90
	85	61	MBH	277	283	288	294	285	290	296	302	291	297	303	309	297	302	308	315
			SHC	242	247	252	257	258	263	268	274	273	278	284	290	287	292	298	304
		67	MBH	309	315	321	327	312	318	324	331	314	321	327	333	316	322	329	335
			SHC	183	230	276	312	189	241	295	321	198	253	291	326	224	269	299	328
		73	MBH	320	326	333	339	321	327	334	340	322	328	334	341	325	331	338	344
			SHC	119	172	209	248	121	175	216	267	123	180	231	271	124	189	236	278
	95	61	MBH	257	262	267	273	265	270	275	281	272	278	283	289	278	283	289	295
			SHC	232	236	241	246	248	253	258	263	264	269	274	280	271	277	282	288
		67	MBH	284	290	296	302	289	300	306	312	305	311	317	323	308	314	320	317
			SHC	177	225	269	309	186	237	285	305	194	248	281	321	201	261	289	295
		73	MBH	317	323	330	336	318	324	331	337	320	326	332	339	320	327	333	340
			SHC	116	164	204	245	118	167	211	262	119	169	220	2626	121	182	220	267
	105	61	MBH	236	241	246	251	245	249	254	259	250	254	260	265	259	264	269	275
			SHC	222	226	230	235	238	243	248	253	234	238	243	248	253	258	263	268
		67	MBH	276	281	287	293	282	288	294	300	287	292	298	304	291	297	302	309
			SHC	169	216	265	289	178	230	280	295	186	246	276	292	195	297	280	291
		73	MBH	310	316	322	328	312	318	324	331	313	319	326	332	315	321	327	334
			SHC	111	158	198	234	113	164	203	259	114	164	210	257	116	174	211	256
	115	61	MBH	216	220	224	229	223	227	232	237	231	235	240	245	240	244	249	254
			SHC	212	216	220	224	216	220	224	229	226	230	235	239	236	240	245	250
		67	MBH	253	258	263	269	258	263	268	274	264	269	275	280	271	276	281	287
			SHC	159	208	255	260	168	221	263	269	177	235	268	276	185	249	276	281
		73	MBH	298	304	310	316	300	306	312	319	302	308	314	320	303	309	315	321
			SHC	106	153	193	222	107	160	196	253	109	160	203	248	111	168	203	149
	125	61	MBH	196	200	204	208	203	207	211	215	210	214	218	223	218	222	227	231
			SHC	192	196	200	204	196	200	204	208	205	209	213	218	214	219	223	227
		67	MBH	230	235	240	244	235	239	244	249	240	245	250	255	246	251	256	261
			SHC	144	189	232	237	153	200	239	244	161	214	244	251	168	226	251	256
		73	MBH	271	276	282	287	273	278	284	290	275	280	286	291	275	281	286	292
			SHC	96	139	175	202	98	146	178	230	99	145	184	226	101	153	185	227

Notes: 1.All capacities are gross and have not considered indoor fan heat.To obtain NET cooling capacity subtract indoor fan heat.
2.MBH=Total Gross Capacity. (Unit:1000Btu/h)
3.SHC=Sensible Heat Capacity. (Unit:1000Btu/h)

8. START-UP

■ **Packging and components**

- Is the unit properly located and level with the proper clearance?
- Is the duct work correctly sized, run, taped, insulated, and weatherproofed with proper unit arrangement? See Ductwork Installation section.
- Is the wiring properly sized and run according to the unit wiring diagram?
- Are all the wiring connections, including those in the unit, tight?
- Has the unit been properly grounded and fused with the recommended fuse size? See Wiring Data.
- Have the air conditioning systems been checked at the service ports for charge and leak tested if necessary?
- Does the condenser fan and indoor blower turn free without rubbing, and are they tight on the shafts?
- Has the indoor blower speed been determined and the proper speed been set? See the Unit Wiring Diagram.
- Are all covers and access panels in place to prevent air loss and safety hazards?

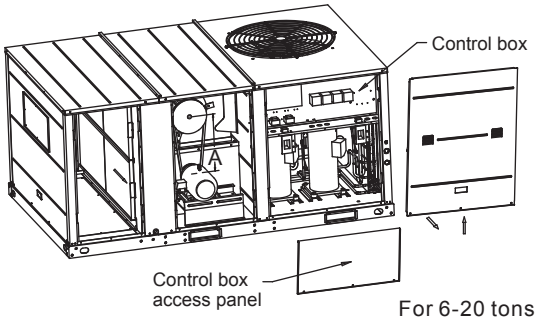
■ Starting the unit in the cooling mode

■ **Voltage**
With the compressor operating, check the line voltage at the unit. The voltage should be within the range shown on the unit nameplate.
If low voltage is encountered, check the size and length of the supply line from the main disconnect to the unit. The line may be undersized for the length of the run.

■ **Cooling shut down**
Place the system selector in the OFF position or reset thermostat at a setting above room temperature.
Do not de-energize the main power disconnect except when unit is to be serviced. Power is required to keep the heat pump compressor warm and boil off refrigerant in the compressor.

9. MAINTENANCE AND UPKEEP

■ Regular maintenance and upkeep
Some regular maintenance and upkeep have been carry on by user, includes: change the one-time dust filter, clean casing, wash condenser and replace a new belt, as well as do some test for the equipment.



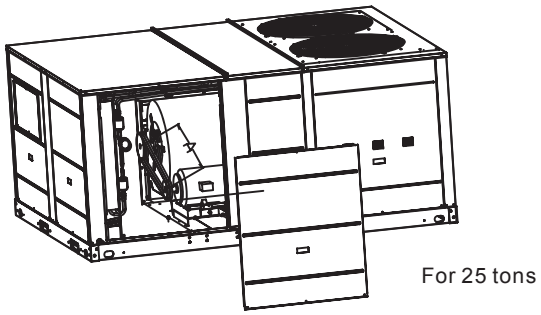


Fig.9-1

Tab.9-1

Range (Ton)	A (mm)
6/7	328
8/10	395
12/15	555
18/20	525
25	695

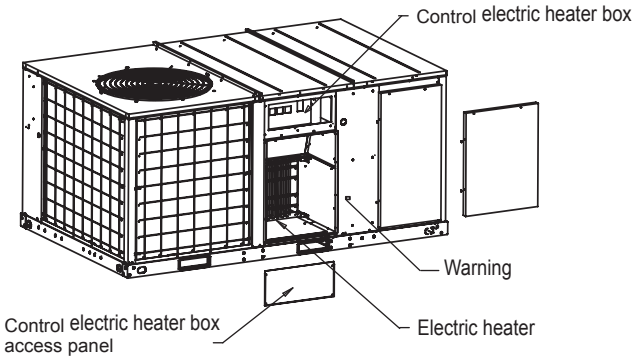


Fig.9-2

WARNING

At least 1m flame resistant layer must be laid at the end of the air duct internal surface.

■ Regulating belt of rate of tension, inner fan
Refer to *Fig.9-3*, Fixed bolt of electric motor's supporting slide was loosened, following electric motor was drived, belt of rate of tension will begin change.

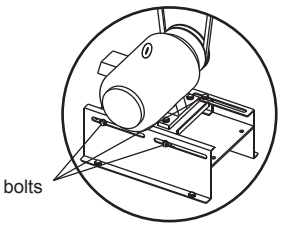


Fig.9-3

■ Method of belt tensioning using belt tension indicator
Calculate the deflection in mm on a basis of 16mm per meter of center distance .Center distance (m)×16=deflection (mm).

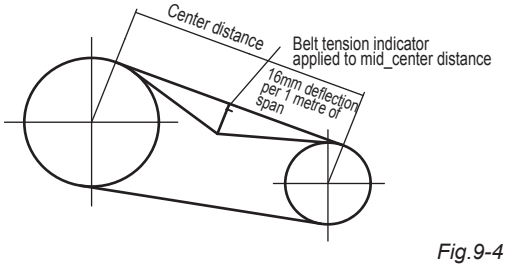


Fig.9-4

Tab.9-2

Belt section	For reguired to deflection belt 16 mm per metre of span		
	Small pulley diameter (mm)	Newton(N)	Kilogram-force(kgf)
SPA	80 to132	25 to 35	2.5 to 3.6
SPB	140 to 224	45 to 65	4.6 to 6.6

NOTE

The belt which is too tight or too loose may generate noise and be harmful to the unit.

■ Dismantle the air filter.

- Twist of screws and up the plate that is gets out.
- Upon loose the filter-baffle-plate, the filter could be pulled out along the supporting slot.

For 6-20 tons

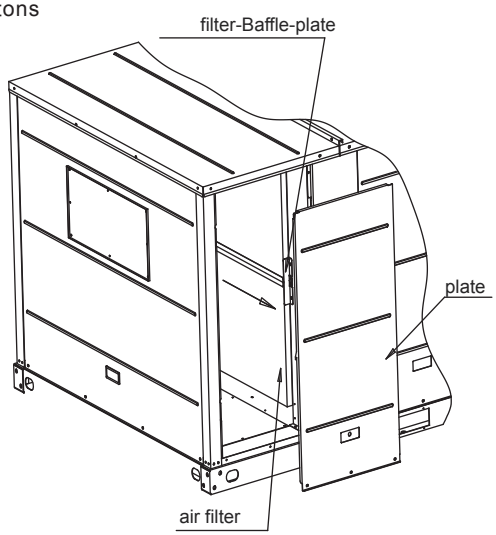


Fig.9-5

For 25 tons

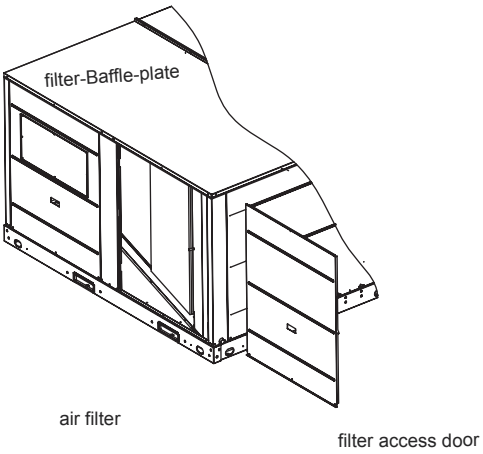


Fig.9-6

■ Clean the air filter (Vacuum cleaner or pure water may be used to clean the air filter. If the dust accumulation is too heavy , please use soft brush and mild detergent to clean it and dry out in cool place) .

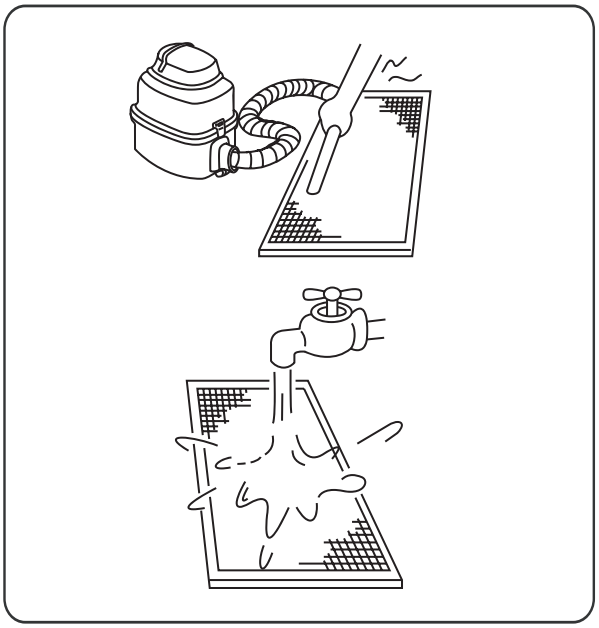


Fig.9-7

- The air-in side should face up when using vacuum cleaner.
- The air-in side should face down when using water.

CAUTION

Do not dry out the air filter under direct sunshine or with fire.

- Re-install the air filter

■ Condenser coil
Unfiltered air circulates through the unit's condenser coil and can cause the coil's surface to become clogged with dust, dirt, etc. To clean the coil, vertically (i.e., with the fins) stroke the coil surface with a soft-bristled brush. Be sure to keep all vegetation away from the condenser coil area.

■ Maintenance performed by serviceman.
To keep your unit operating safely and efficiently, the manufacturer recommends that a qualified serviceman check the entire system at least once each year and any other time that you feel one is needed. Your serviceman should examine these areas of your unit:

- Filters
- Motors and drive system components
- Economizer gaskets (for possible replacement)
- Safety controls (for mechanical cleaning)
- Electrical components and wiring (for possible replacement and connection tightness)
- Condensate drain (for cleaning)
- Unit duct connections (to see that they are physically sound and sealed to the unit casing)
- Unit mounting support (for structural integrity)
- The unit (for obvious unit deterioration)

CAUTION

Do not operate the unit without the evaporator fan access panel in place. Reinstall the access panel after performing any maintenance. Operating the unit without the access panel may result in severe personal injury or death.

SAMSUNG ELECTRONICS

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